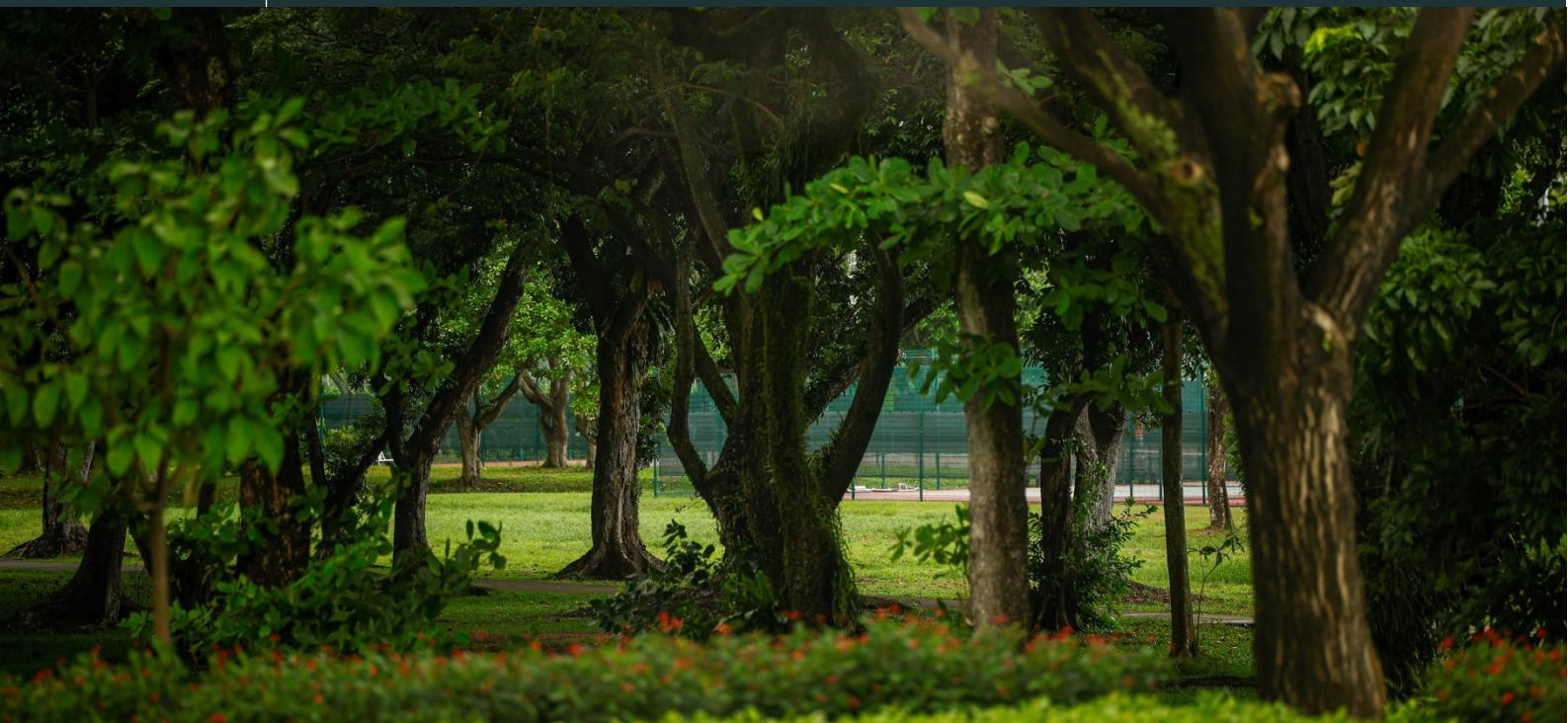
edge impact™

Advancing compost use in the built environment

A report demonstrating the viability, efficacy, and requirements to influence the utilisation of recycled compost in the built environment and urban development projects.

NSW ENVIRONMENT PROTECTION AUTHORITY



ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Custodians of the land and water, and we show our respect for Elders past, present and emerging.

Edge recognises the connection between land, food, and ecological and biodiversity outcomes. Circular economy systems, such as compost, are a means of connecting systems that were once traditional practices and created value for people and land. It is a means of regenerating the land in which Indigenous communities continue to support and seek in our urbanised environments.

Whilst not explicitly stated, this report seeks to demonstrate the importance of these circular, regenerative systems to all elements of this Earth and provide commercial value to the business models of today.

PREPARED FOR

NSW Environment Protection Authority

6 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

https://www.epa.nsw.gov.au/

REPORT BY

Mike Twemlow – Principal Consultant at Edge Impact

Nick Jackson – Consultant at Edge Impact

Greenhouse, Level 3
180 George Street
Sydney NSW 2000
Australia
www.edgeimpact.global

Contents

1. Executive summary and key findings

The NSW Environment Protection Authority (EPA) commissioned Edge Impact (Edge) to investigate the use of compost made from recycled Food Organics and Garden Organics (FOGO compost) in the built environment. The findings demonstrate that there is currently low use of recycled FOGO compost and a lack of application and knowledge in both the private and public sector. To uncover why this is pertinent across both sectors; this report seeks to:

- Identify the current use and applications of soil in urban development projects
- Evaluate why compost is not currently utilised across the sector and identify any relevant knowledge gaps
- Unearth barriers and enablers to encourage adoption of FOGO compost

During the research and engagement phase, Edge interviewed several stakeholders in the built environment sector. This included property and infrastructure organisations, regional council bodies, and relevant organisations such as the Infrastructure Sustainability Council (ISC) and the Green Building Council of Australia (GBCA). Additionally, Edge reviewed four national and international case studies of FOGO compost use and conducted desktop research regarding quality concerns for compost and the use of current Australian standards (AS). All three components of the research and engagement phase articulated clear gaps in knowledge and commercial understanding of the benefits of FOGO compost.

Along with minimal knowledge on the environmental benefits of compost or its end-market supply opportunity in NSW, multiple stakeholders noted down additional barriers that impede its potential use in urban development projects. These factors included:

- Commercial cost-benefits of changing business-as-usual (BAU) practices
- Lack of understanding of the link between recycled compost to sustainability targets and industry credit rating tools
- Lack of knowledge of FOGO compost specifications and requirements and tendency to adhere to current best-practice standards
- Performance issues and wariness of utilising FOGO compost due to chemical or physical contamination.

The EPA is working to support the development of new markets for compost to increase demand for the additional supply, stimulated from the NSW FOGO mandates. The research findings indicate there are several educational, commercial, and performance levers that could be utilised to accelerate the use of FOGO compost in the built environment:

- Collaboration with industry experts to lead short programs to develop more NSW-ready sub standards (AS 4419 and AS 4454) for types of soil specifications.
- Pilot and scale soil category trials for blends of compost across various land applications.
- Work with ISC and GBCA technical committee groups to introduce compost made from recycled FOGO within current credits.
- Conduct cost- benefit analysis of compost made from recycled FOGO across project lifecycles
- Utilise conferences, workshops and forums to uplift education and knowledge
- Provide focused financial support to early adopters and innovators with grant funding.

It was identified that building a circular, demand-ready market for FOGO compost in the built environment depends on three foundations:

1. Trust - through clear standards and visible assurance.
2. Education and visibility - through concise, NSW-specific guidance and case evidence.
3. Value for the customer – through clear cost-benefit results over a project life cycle.

Edge identified 6 key opportunity pathways to enhance adoption and implementation of FOGO compost as BAU for the built environment. These pathways are listed below, and further expanded on in the report:

- **Soil specifications and standards** that are NSW, project-ready sub-standards, reducing risk for clients and delivery teams.
- **Pilot FOGO compost trials in separate soil categories** to generate credible FOGO compost performance and positive cost-analysis data.
- **Support the inclusion of FOGO compost in credit rating tools** within the ISC and the GBCA.
- **Conduct cost-benefit analysis across project lifecycles** to review where, across the value chain of FOGO compost in the built environment, are savings clear compared to BAU.
- **Attend conferences, workshops, and provide educational uplift opportunities** to existing infrastructure, property, council and landscaper forums.
- **Grant funding** can help to unlock FOGO compost use for early adopters and generate evidence-based outcomes of success in industry wide applications.

2. Introduction

The transition to statewide FOGO collection by 2030 will significantly increase the volume of composted food and garden organics available in New South Wales. Identifying reliable and high-value end markets for this material is important for achieving circular economy outcomes, reducing emissions from landfill and supporting broader waste diversion goals. The built environment presents a major opportunity for increased compost use, given the large quantities of soils and soil conditioners used in infrastructure, property development and council-managed landscapes. NSW EPA's 2018-2019 organics markets report found that urban amenities could represent 68% of the potential end-market demand[1] for FOGO recycled compost.

Current uptake of compost in these sectors is limited. Use is often ad hoc, shaped by business-as-usual procurement practices, varied levels of technical understanding and inconsistent reference to soil and compost standards. Stakeholders highlighted uncertainty around contamination risks, responsibility for testing, and the lack of locally relevant case studies that demonstrate performance and commercial value. These factors contribute to inconsistent specification and application of compost across projects.

This report, prepared by Edge Impact for the NSW Environment Protection Authority, draws on stakeholder interviews, national and international case studies and targeted desktop research. It provides an evidence-informed understanding of how compost is currently procured and applied in the built environment and the conditions that limit wider adoption.

The purpose of the report is to outline:

- how compost products are understood, specified and used in urban landscapes
- the technical, commercial and behavioural barriers affecting uptake
- the role of standards, specifications, procurement settings and guidance
- the actions needed to support safe, consistent and scalable use of FOGO-derived compost

The chapters that follow present the market context, summarise stakeholder insights, analyse system-wide barriers and outline practical opportunities to strengthen end markets and improve confidence in compost use across the built environment.

[1] NSW EPA. 2021. *Positive outlook for organics markets in NSW.* NSW Organics Market Analysis 2020. PP. 1-2.

3. Project objectives and methodology

The built environment offers a significant opportunity to uplift the application of FOGO compost in urban development projects. Through stakeholder engagement interviews, desktop research, and case study reviews, this project has delivered a comprehensive analysis of the opportunities and levers to support the commercial viability for the procurement of compost in the built environment.

3.1 Project objectives:

Edge undertook an extensive review of opportunities that could increase the uptake and efficacy of FOGO compost in urban development projects. This report specifically targets the built environment (developers, asset managers, councils), landscapers and suppliers.

This report seeks to build on the report completed by Marsden Jacobs Associates (2025)[2] to providing additional industry context. The report quantified and provided context to the current use of compost in council and government managed green spaces, and the opportunity for FOGO buyback programs. Market supply of FOGO compost will progressively increase towards and beyond 2030 due to the FOGO mandates for councils and businesses.

This report consolidates a practical understanding of:

- Current commercial urban development practices with soil procurement and use. This will be specific to the built environment – commercial developments (e.g. property), council development, and asset maintenance within Greater Sydney.
- Perceptions towards compost use and applications
- Industry barriers to scale compost procurement and use
- Appetite for FOGO compost policy and guidance in NSW

3.2 Project scope

Edge conducted stakeholder engagement to unveil current barriers to adopt FOGO compost in the built environment. This included evaluating current-use practices (if any) and understanding the public and private sector's appetite for policy levers to increase use of FOGO compost in future urban development projects. Additionally, case studies with practical use-case scenarios of FOGO compost were reviewed and desktop research was conducted to examine further barriers and enablers.

Stakeholder engagement interviews were the primary focus of the project. Understanding what drives BAU decisions and the current supply chain for soil in the built environment helps to inform insights and levers to overcome stakeholder practices.

Interviewed stakeholders included developers, council groups, the landscaping industry, state government organisations, and built environment industry bodies.

Additional insights gained as part of the discovery phase of the report included:

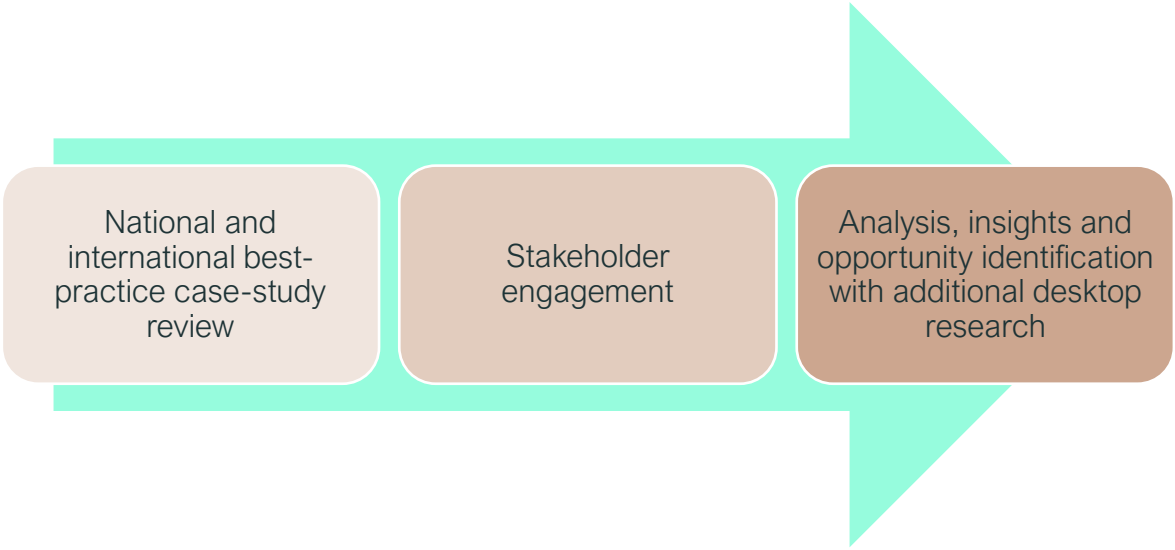
1. A review of four national and international case studies for the use of recycled compost
2. Categorising relevant insights and levers between the private and public sectors
3. A desktop research examination of the current state and validity of FOGO compost use in the built environment.

[2] Marsden Jacob Report. 2025. *'FOGO Compost Buyback Report'.* Economics Public Policy Markets Strategy < https://www.epa.nsw.gov.au/sites/default/files/2025-08/FOGO-compost-buyback-report.PDF >

3.3 Methodology

Edge and the EPA formulated a standardised methodology that would extract insights and recommendations to support the uptake of FOGO compost in NSW and relevant commercial and risk barriers. This methodology provided a platform to inform stakeholder conversation on their perceptions of FOGO compost and the current maturity and viability of use in the built environment.

The methodology was comprised of a three-phase approach:



3.4 National and international best-practice review

National and international practices towards recycled compost use are progressively advancing as countries explore buy-back programs and landscaping applications. Each case study demonstrated positive environmental, social, and economic outcomes for the advancement of FOGO compost use in NSW.

Edge evaluated each case study by:

- Background and context for compost use applications
- The volume and method of distribution of compost at the site
- Implementation approach
- Outcomes and lessons learned
- Relevance and implications for the NSW and Sydney metro regions

A key focus within each case study was directed towards the enhancement of soil health. This included the soil conditioners applied and the environmental value towards healthy plant establishment, water retention during urban runoff, and other byproducts such as amplifying biodiversity.

3.5 Stakeholder engagement

Stakeholders prioritised for engagement were those with direct influence on urban development and corridor projects, developers and asset owners, Tier-1 contractors, landscape architects and contractors, asset managers, regional organisations of councils (ROCs) and local councils. Peak bodies and rating organisations were also included because they provide best-practice advice and shape incentives through credit frameworks relevant to their domains (e.g., Green Star for property and the

Infrastructure Sustainability (IS) rating tool for infrastructure) and are actively investing in the introduction of sustainable tools and innovations across both sectors.

Each interview was held for 30 – 45 minutes with Edge, and where possible, a representative from the EPA. A total of 10 stakeholders (including additional team members from each stakeholder organisation) were interviewed. Using the findings from the Marsden Jacobs report and Edge's Organics Market Development Grant Research (2022)[3], Edge targeted five key topic areas during the interviews. These were then developed into key relevant insights; segregated between the public and private sectors as well as noting where barriers and enablers overlapped.

The five key areas included:

- Current use of compost (if any)
- Internal and external decision-making drivers for compost usage
- Barriers to adoption in design, procurement, and delivery
- Awareness of existing standards and guidelines with compost
- Appetite for policy, projects, or technical guidance

3.6 Insights and opportunities

Edge reviewed stakeholder insights across the five topic areas to extract key themes and considerations noted by interviewees. These were consolidated to capture the differing and similar operational and practical barriers that the built environment currently faces when considering the deployment of FOGO compost.

By categorising the major themes and noting where overlaps occurred across stakeholder groups, Edge were able to identify insights and pathways that could accelerate the demand for FOGO compost in the public and private sector. Accelerating the demand for FOGO compost is increasingly important as the interviews demonstrated a large gap between compost education and understanding its applications in the built environment. Most participants were unaware of the wider benefits of FOGO compost, procurement processes, or how/where it could be applied in various urban development projects.

Through a combination of desktop research, case-study reviews, and stakeholder interviews, this report reviews the key insights and recommendations for the EPA to consider supporting to enable positive, practical-use outcomes for FOGO compost. This report also captures contrasting financial, legislative, and operational considerations that can influence and uplift end-markets for FOGO compost.

Together, these methods shape a clear and credible foundation for interpreting the findings presented in the chapters that follow.

[3] EPA & Edge Impact. 2022. '*Cool Compost Research'.* Cool Compost. <https://circularag.com.au/wp-content/uploads/2022/09/Cool-Compost-landscapers-and-urban-designers-factsheet.pdf >

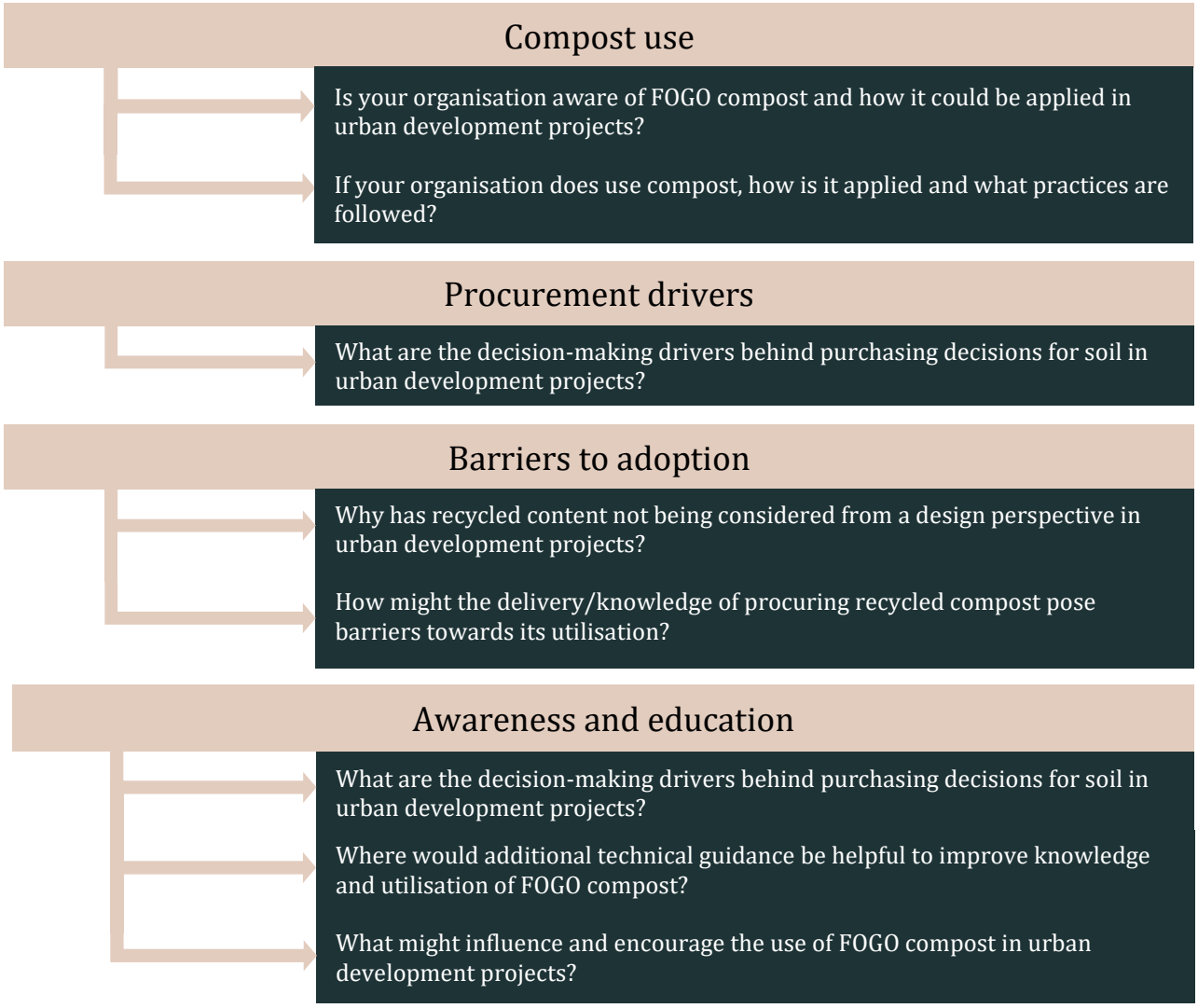
4. Stakeholder engagement overview

Stakeholders offered insight into current use practices, how soil and compost decisions are made in practice, revealing the commercial, behavioural and capability dynamics that shape real-world outcomes.

A total of fifteen individuals were interviewed across eleven stakeholder groups.

Stakeholder group	Groups engaged
Property organisations	2
Infrastructure organisations	3
Green Building Council (GBCA)	1
Infrastructure Sustainability Council	1
Landscaping / landscape architects	2
Regional organisation of councils (ROC)	1
Land and Property Government Group	1

Stakeholder interviews by Edge consultants and the EPA followed an aligned structure to draw out commercial insights and knowledge regarding FOGO compost. Five key categories for consultation were developed and are listed below.



Additional insights were also explored where relevant to the stakeholder. This was intended to ensure Edge could assess the viability of commercial and geographical levers that may incentivise or impede the use of FOGO compost in both the public and private sector. These included:

- Development Control Plans (DCP's) to instigate compost use as a local council lever
- Compost viability with built environment rating tools
- Regional constraints

These additional themes proved insightful and helped to shape the final report. The interviews identified the following opportunities/barriers:

Development Control Plans:

DCPs will not likely be an effective tool to help encourage and introduce FOGO compost within urban planning. Regional council bodies noted that DCPs can be adapted or changed by the NSW government through state planning laws and policies, especially as the need for rapid housing developments mean DCPs may be overwritten. LEPs (Local Environment Plans), whilst not having the scale of DCPs, could provide more outcome focused routes to enable the use of FOGO compost without impediments from state planning policies and laws.

Built environment tools:

Built environment rating tools from the Green Building Council Australia (GBCA) and Infrastructure Sustainability Council (ISC) are two pathways that could improve the use of FOGO compost. This is relevant to organisations who actively use GBCA and ISC to meet their sustainability ambitions who are willing to pilot new innovations. FOGO compost could be integrated into current credit rating tools, helping to act as a conduit for the private and public sector to meet their Environmental, Sustainability and Governance (ESG) and sustainability targets. These are explored further in the report.

These stakeholder perspectives ground the analysis in practical experience and help clarify the conditions influencing soil and compost decisions.

5. Market context – Compost in the built environment

Understanding current soil practices, standards and specifications provides the technical grounding needed to interpret why compost is inconsistently adopted and where opportunities for improved soil performance can be realised.

5.1 Current practices for compost use in the built environment

In most NSW built environment projects, soils and planting media are procured and installed under business-as-usual arrangements. Technical requirements are sometimes set out in the client's specification, but just as often they are left to the landscape subcontractor to interpret during tendering. Soil testing is undertaken inconsistently, and quality assurance varies by project size, client capability and contractor practice. Australian Standards provide an anchor, with AS 4419 for landscaping soils and AS 4454 for composts and soil conditioners, but they are not referenced or enforced uniformly across contracts, which leads to variable outcomes on site.

In practice, compost is specified and used inconsistently. On many projects it is not considered at all, or it appears late in delivery as a generic "soil conditioner" without clear provenance or performance intent. Where testing occurs, it is often ad hoc; acceptance criteria are rarely stated; and responsibilities for sampling, verification and documentation are unclear. As a result, outcomes differ between jobs and contractors, and most teams default to familiar practices such as imported or recycled topsoil with fertiliser and irrigation, rather than treating compost as a specification-driven input.

These patterns are evident even among organisations that might be expected to lead: Tier-1 infrastructure contractors, property owners with sustainability targets, peak bodies involved in rating high-profile projects, and regional councils with mature FOGO collection. Rating tools shape ambition and language, but they do not, on their own, translate into compost requirements at contract level. Price-weighted tendering and value engineering favour business-as-usual inputs, while concerns about contamination and traceability, together with a lack of locally credible performance and cost data, reinforce caution. Consequently, FOGO-derived compost remains peripheral rather than mainstream in urban landscaping specifications.

In large infrastructure projects, specifications, conformance surveillance and performance monitoring extend to every work package, including landscaping. This regime is effective at reducing delivery risk and supporting value for money for the client; however, it also creates path-dependency. Introducing a new practice such as compost-amended blends typically requires re-drafting specifications, updating verification and testing plans, and adjusting supplier prequalification which are all steps that add time and coordination effort. The net effect is caution. Unless compost is explicitly required or piloted within a controlled change process, teams default to established inputs.

At the same time, compost supply is increasing as FOGO programs expand, intensifying the need for reliable end markets. Redirecting food and garden organics from landfill reduces methane emissions and supports circular outcomes, but turning that supply into consistent, specification-grade soil amendments depends on clear expectations for quality, contamination controls and documentation. It is important to be precise: FOGO-derived compost is not a separate standard, if it meets AS 4454, it can be specified like any other compliant soil conditioner. The current gap is the lack of routine, contract-level reference to that standard and to project-appropriate acceptance criteria.

Finally, procurement pathways differ across property, infrastructure and council projects, and these differences influence how standards and testing are applied. Property portfolios tend to rely on

designer-led specifications and portfolio standards; infrastructure programs work within project charters, rating interfaces and delivery contracts; councils use planning instruments and procurement templates. These structural differences help explain the uneven consideration of compost across the market today.

5.2 Existing standards and soil tests

AS 4419 and AS 4454 are voluntary standards that may be applied by landscapers. Whilst considered best-practice, both standards are not enforceable in the current system and not always placed within contractor agreements. The built environment primarily focuses on plant survival rates as a key metric and whether AS 4419 and AS 4454 are administered to support this metric is up to the landscaper's specification requirements or response to tenders. Additionally, soil tests that can help better inform soil blends, are used ad hoc by landscapers and are generally not required as part of a tender response. Soil tests are expensive and can cause delays, affecting the projects initial costs and efficiencies.

Whilst industry best-practice does include soil tests and procuring soil based on AS 4419:2018[4] (landscaping and garden soils) and AS 4454[5] (composts, soil conditioners, and mulches), further education on the benefits and requirements are needed to enforce such outcomes across the industry. The gap is not that FOGO compost isn't in these existing standards; the gap is that contracts and tender documents do not consistently reference AS 4419/AS 4454 or define who is responsible for sampling, verification and acceptance.

AS 4419 and AS 4454 have three category levels regarding soil types. These include:

- Category A – Topsoil: direct planting, lawns, and garden beds.
- Category B – Landscape soil: used for deeper soil profiles (e.g. parks)
- Category C – Structural soil: designed for areas subject to compaction or heavy loads (near trees in urban environments).

Across these categories, both standards consider a consistent set of physical and chemical attributes (e.g., texture and structure, organic matter, contaminants, pH, electrical conductivity, nutrients, moisture, particle size) and set acceptance ranges. When projects do not require pre-screening and testing, of either recycled or new soils, there is a higher risk of mismatch between soil/blend and intended use, and a perceived risk of performance issues that can drive rework and maintenance costs. In this context, delivery teams often minimise change and revert to familiar mixes to avoid perceived risk. Adding compost is sometimes seen as introducing uncertainty, particularly for native plantings, yet the weight of practice and published trials indicates that appropriately specified, moderate compost amendments improve soil structure, water-holding and establishment performance, including in native landscapes, when rates and blends are matched to site conditions.

In practice, the hurdle is not whether FOGO-derived compost can meet quality expectations, it can when specified to AS 4454, but that it is still treated as unfamiliar and therefore risky. Without clear, contract-level instructions that nominate compost products and set simple testing and acceptance steps, delivery teams default to familiar mixes and compost is overlooked. AS 4454 does not currently consider chemical contaminants such as poly-fluoroalkyl substances (PFAS), which have been found in previous compost mixes. Sub standards introduced must have a clear demonstration of pasteurisation and blending best-practice and guidance to ensure contamination is minimised and pre-screening occurs. The next section examines the specific factors limiting compost uptake, including awareness, perceived contamination risk, capability and procurement dynamics, and where effort will most effectively unlock demand.

[4] Australian Standard Tm. 2003. AS4419. *Soils for landscaping and garden use.* Australian Standard Potting Mix.
[5] Australian Standard Tm. 2012. AS4454. *Composts, soil conditioners, and mulches.* Garden Soils and Potting Mixes.

5.3 Long-term innovative applications

Previous NSW work (including the grant projects showcased through the Cool Compost platform) and wider research indicate that FOGO-derived compost can deliver more than short-term soil improvement. Used appropriately, it supports better plant establishment and survival, reduces reliance on irrigation and synthetic fertilisers, improves soil structure and biological activity, and can contribute to lower-carbon material choices through recycled content. These benefits accrue at project level and compound across precincts when requirements are consistent and basic maintenance sustains soil health over time.

Realising this potential in the built environment will depend on making the benefits visible and credible, not just plausible. Many teams and organisations do not yet connect compost to outcomes that matter commercially. The next step is to present evidence in formats that align with how decisions are made: concise demonstrations of performance and simple cost signals, coupled with clear instructions that fit existing procurement and delivery processes.

Against that backdrop, the following innovation levers can move compost from promising to practical over the medium term (beyond immediate pilots and guidance):

- **Standard practice, co-designed with industry:** Work with landscapers and soil blenders to formalise straightforward, "ready to use" practices for incorporating FOGO-derived compost across common soil types and applications. This should build directly on AS 4419/AS 4454 and include plain-English handling notes and quality checks so contractors can price and deliver with confidence.
- **Pilots with simple, decision-relevant metrics:** Support a small number of well-scoped trials with interested property and infrastructure partners. The emphasis should be on a set of practical measures and metrics (circular materials)[6], plant establishment/survival, watering and fertiliser needs, basic soil health indicators and any quality issues, reported in a format that estimators and project managers can use. Funding can be targeted to de-risk first movers.
- **Recognition through rating tools:** Once guidance and evidence are in place, work with ISC (infrastructure) and GBCA (property) so compost use and its outcomes can be recognised within their schemes. This should complement and not replace clear contract specifications and quality assurance (QA).
- **Targeted capability building:** Provide short workshops and forums for project managers, designers, contract managers and suppliers that focus on "how to do it": what to specify, what to check on delivery, and what to maintain. Use live examples to demystify roles and responsibilities.
- **Applied research and knowledge sharing:** Commission concise, practice-oriented notes that explain where soil tests add value (relative to whole-of-life costs), how to interpret results, and how to align testing responsibilities in contracts. Share findings openly so learning propagates across councils, property portfolios and delivery partners and confusion and weariness regarding contamination and pollutants[7] is demystified.

Taken together, these actions keep the narrative aligned with the rest of this report: evidence plus ease. By pairing clear, co-designed practices with simple performance and cost information, and reinforcing them through training and, where appropriate, rating-tool recognition, the sector can move from ad hoc use to consistent, specification-driven adoption of FOGO-derived compost in the built environment.

[6] Ranasinghe, N. et al. 2024. *'Enhancing building material circularity: A systematic review on prerequisites, obstacles, and the critical role of data traceability.'* Journal of Building Engineering.
[7] Manea, E. E. et al. 2024. *'Composting as a Sustainable Solution for Organics Solid Waste Management: Current practices and potential improvements.'* Special Issue Recycling Biomass for Agriculture and Bioenergy Production.

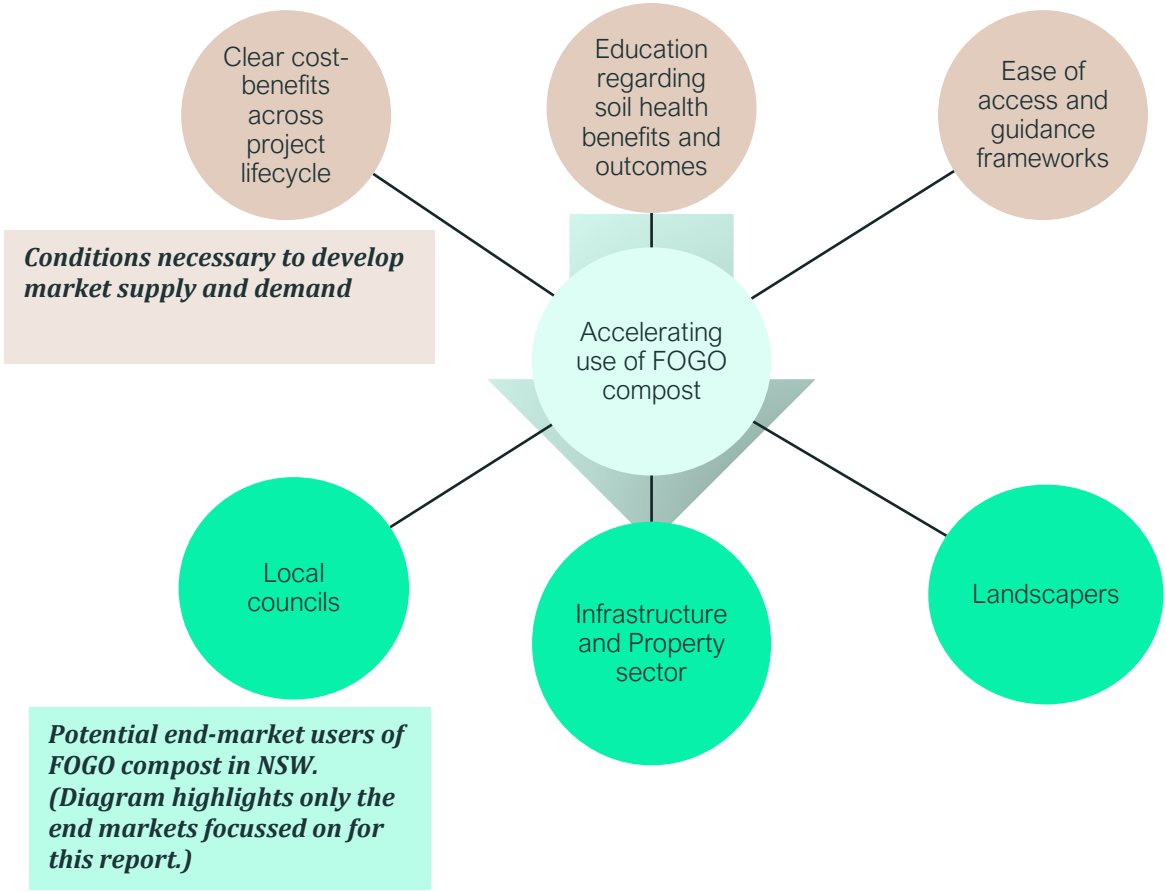
6. Detailed findings by market type

Stakeholder engagement across councils, infrastructure, property and the landscaping supply chain showed a consistent picture: FOGO-derived compost is not yet treated as a performance tool in urban projects. Awareness of practical, project-level benefits (plant establishment and survival, irrigation and fertiliser demand, reduced re-planting and maintenance) is low; contract language and testing responsibilities are uneven; and perceived contamination risks keep decision-makers cautious. Price-weighted tendering reinforces familiar mixes, while large programs, especially in infrastructure, are governed by specifications and surveillance regimes that make change possible but procedurally slow.

These headwinds manifest differently in each type. Councils are generally supportive and see the circular-economy signal, but reputational risk from PFAS, physical contaminants such as asbestos, glass and plastics, or persistent organic pollutants (POP's), combined with tight maintenance budgets drive conservative choices unless QA and acceptance steps are crystal clear. Infrastructure delivery operates under comprehensive specifications; this reduces delivery risk and supports value for money, yet it also creates path-dependency—teams need a clear mandate and simple evidence to justify altering the baseline. Property owners often scope landscaping late and view it through cost and upkeep, so compost is rarely specified to deliver measurable outcomes. Measuring cost and upkeep needs to be quantitative and follow certain metrics that are reflected against current business-as-usual practices. These include fertiliser procurement and application, landscaper maintenance, water usage, or plant survival rates and procurement fees. Landscapers, designers and soil suppliers work within the client brief and competitive pricing; without explicit requirements and named testing responsibilities, they default to predictable inputs and minimal testing to win work.

Under current practices in each sector, the estimated 800,000 tonnes of expected NSW FOGO product to be recycled (quantified in the Marsden Jacobs Report) in the coming years will have limited end-market uptake despite clear commercial value. However, with a potential for 68% FOGO compost market demand solely within urban amenities, the market for large quantities of FOGO compost soil (e.g. 25L bags or cubic metres) and the commercial benefits needs to be developed. The Marsden Jacobs report demonstrates this by noting that Penrith Council was able to save approximately $20 per tonne of soil when using FOGO compost. This was quantified by observing the reduction in use of synthetic fertilisers, demonstrating the need for further cost-benefit analysis and market confidence.

This section presents diagnostic findings for each market type —what is used now, how decisions are made, and where confidence falters—based on interviews and document review. It deliberately avoids prescribing solutions in detail. The levers to address these issues (guidance, QA and acceptance, evidence and procurement settings) are developed later to minimise duplication and to keep this chapter focused on how the market currently behaves and why.



6.1 Market type – Councils

Overview

Councils in NSW will be required to provide all NSW residents who have a landfill waste service with a FOGO collection by July 2030[8]. Waste service providers will be contracted to provide FOGO recycling services to residents. Many councils are supportive in principle and recognise the circular-economy signal to develop end markets. However, adoption of the product in public landscapes remains limited and ad hoc, and internal confidence varies by team.

Current use and applications

Compost is used sporadically in parks, streetscapes and bioswales. Requirements are inconsistently embedded in tender documents, and maintenance contractors are seldom bound to compost-inclusive blends.

Barriers to implementation

- Councils are wary of chemical and physical contaminants, which may cause negative publicity and erode council trust.
- Education gap between park/facility managers and compost use.
- Inconsistent contract reference to AS 4419/AS 4454 and unclear testing responsibilities.
- Councils are under pressure to meet financial KPIs – buy-back programs need to prove financial validity.

[8] EPA. 2025. *'FOGO mandates and rollout'.* < https://www.epa.nsw.gov.au/Your-environment/Recycling-and-reuse/business-government-recycling/Food-organics-and-garden-organics/fogo-mandates-and-rollout >

- Planning levers can be fragile: DCPs may be overridden; LEPs are more durable but slower to change.

Enablers and levers

- Develop accepted standards, contamination levels (%), and information to integrate into tenders for council projects.
- Sub-standards (e.g. AS 4419 and AS 4454) developments for various land applications and blends could enhance performance and trust.
- Establish clear case-study examples for park/facility managers that highlight cost-effectiveness and ease of compost use in land, not impeding BAU.
- Online masterclass or webinar series targeted for council procurement teams and executives.
- Published council pledges for buy-back programs as conditions for funding agreements (whether buy-back subsidies or fixed rates).

Opportunity and applications

- Council exposure (demonstration) to compost pasteurising/blending processes and efforts to minimise contamination can enhance interest.
- DCP's are not a reliable pathway as NSW government can override their planning policies and often, DCP's may also be inconsistent between individual local councils in how they are applied and with competing issues. For example, in recent years, DCP's have been overwritten by the state in order to meet the current push for rapid housing developments that are being required to support growing urban populations and migration (interstate, intrastate, and international).
- Council procurement and tender teams need to be encouraged to mandate compost in landscaping, property, or infrastructure contracts to ensure the use of soil/FOGO compost blends for land applications within built environment projects.

Evaluation assessment

Stakeholder knowledge: Medium - high

Opportunity to increase recycled compost procurement: Medium

Consideration: Knowledge is evident – councils will require assurance on performance

6.2 Market type – Infrastructure sector

Overview

Major programs (rail, road, bridges) operate under comprehensive specifications and surveillance across all packages, including landscaping. This reduces delivery risk and supports value for money, but it also creates path-dependency: altering specifications requires coordinated updates to verification plans, lab methods and supplier prequalification. Demonstrating FOGO compost cost-benefits (whole-of-life) and bridging knowledge gaps can help encourage internal buy-in from organisations as well as achieving their sustainability targets.

Current use and applications

Where soils are reused from site, testing is variable. AS specifications are prioritised typically from Tier-1 contractors, unless it's for TfNSW or a large-scale project. Contractors may then utilise TfNSW specifications or government/commercial specifications that are provided to them. Compost is rarely required unless explicitly stated by the client. This is explored in the first case study in section 8.

Barriers to implementation

- Change cost: revising specs/ITPs is resource-intensive; teams avoid it without a clear mandate.

- Limited local case evidence with transparent cost and performance data applicable to corridors/precincts.
- Compost seen as unfamiliar in a schedule-driven environment; responsibilities for testing/acceptance not routinely stated.

Opportunity and applications

- Factsheets, guidance, and sub-standards can enable pro-active tender applications with compost.
- ISC credits are highly material to infrastructure corporations, organisations, and other relevant government agencies with ESG sustainability targets. These could be adopted in current standards to improve use.
- Large volumes of soil are used in infrastructure projects. Cost-benefits may be clearer per tonne of soil.

Opportunity and applications

- Demonstrate the cost-benefits of compost against fertiliser, water use, and plant maintenance (and other relevant BAU factors).
- Large-scale government projects are ideal projects for compost integration and thought leadership.
- Collaborating with TfNSW to update their soil specifications for FOGO compost could have scalable impact across the industry and uplift contractor knowledge and applications.

Evaluation assessment

Stakeholder knowledge: Low

Opportunity to increase FOGO compost procurement: High

Consideration: Cost-benefits and education required

6.3 Market type – Property Sector

Overview

Property and asset management organisations support the development of urban precincts, residential properties, and commercial properties such as buildings, retail outlets or land. Green urban spaces across their assets are becoming more material to these organisations to create value for their clients (nature-targets). Property owners and developers view landscapes primarily through cost, aesthetics and maintenance. Many have sustainability targets, but compost is not commonly considered as a lever to achieve them. Specifications are often designer-led; soil testing is uneven and frequently minimised.

Current use and applications

Where compost appears (rare), it is usually as a generic conditioner, not tied to measurable outcomes (establishment, irrigation, re-planting). Portfolio standards seldom reference compost explicitly.

Barriers to implementation

- Limited awareness of project-level benefits and whole-of-life cost implications.
- There are no wide-scale, known case-studies on cost-benefits in property or GBCA. Education was limited across stakeholders in large organisations.
- Landscaping in property projects are often considered from an aesthetic lens, not a sustainability lever.
- Knowledge on FOGO compost logistics, distribution and application are limited.

Enablers and levers

- Factsheets, guidance, and sub-standards can improve how property organisations coordinate their contracts to enforce landscapers to use FOGO compost.
- GBCA credits are highly material to property organisations with ESG sustainability targets. These could be adopted in current standards to improve use.
- Plant survival rates in residential and commercial properties are a key metric. Establishing connections between FOGO compost and improved survival rates can encourage use.

Opportunity and applications

- Demonstrate the cost-benefits of compost against fertiliser, water use, and plant maintenance, especially for a sporadic and smaller volume of plants and soil.
- FOGO compost can have benefits to contaminated land prior to property development.
- Many residential and commercial assets will now or in the future, begin to recycle FOGO as part of the NSW mandate. Connecting this link between stakeholders can stimulate understanding of circular economy value adds to the asset.

Evaluation assessment

Stakeholder knowledge: Low

Opportunity to increase FOGO compost procurement: Medium - high

Consideration: Cost-benefits and education required

6.4 Market type – Landscapers

Overview

Landscapers support property, infrastructure, and council urban development projects. Landscapers translate client specifications into delivered outcomes and carry practical risk on cost, program and defects. In competitive tenders, they prioritise predictability and conformance to the brief.

Current use and applications

FOGO-derived compost is used ad hoc. Soil tests are reduced or omitted where not mandated, due to cost/time pressures, unless it is part of a landscapers standard practice. Blends are often selected on the basis of past practice and experience rather than a shared framework.

Barriers to implementation

- Unclear responsibilities for sampling, verification and documentation.
- Perceived contamination risk and uncertainty about acceptance thresholds.
- Price-weighted tenders discourage non-mandated inputs and additional testing.

Enablers and levers

- Client-endorsed “recipes” (blend ratios by soil type/use) with basic handling notes and QA checklists.
- Clear contract wording and inspection and test plan hold points, so effort is costed and risk is shared.
- Early exposure to successful projects to build confidence and repeatability

Opportunity and applications

- Work with landscapers in pilot trials to determine blend types based on soil and land applications. Demonstrate the cost-benefits of compost against fertiliser, water use, and plant maintenance, especially for a sporadic and smaller volume of plants and soil.
- Provide factsheets or guidance to landscapers that iterate FOGO compost benefits relevant to common large-scale property clients concerned with ESG targets and ISC/GBCA credits.

Evaluation assessment

Stakeholder knowledge: Low-medium

Opportunity to increase FOGO compost procurement: Medium - high

Consideration: Education and trust in product performance.

These patterns across the market provide a critical lens for identifying the underlying system barriers that shape compost adoption.

7. System barriers and the levers to overcome them

Procurement of FOGO compost presents significant opportunities to advance nature, climate, and emission reduction outcomes across public and private sectors. Collaboration with landscapers, alongside safeguards within FOGO compost supply chains, remain critical to ensure enduring success and preventing contamination issues with heavy metals and persistent pollutants.

The EPA, together with rating bodies such as the ISC and GBCA could strengthen upstream policies and rating systems to encourage and incentivise developers and councils to utilise compost. This includes revising and adding FOGO compost into ISC and GBCA rating credits as a lever to incentivise large organisations with ESG relevant targets. These organisations must meet their public commitments and targets; and the ISC and GBCA's credit rating tools provide avenues to do so. Downstream, financial levers – such as setting competitive pricing rates for FOGO compost or grant funding – has the potential to further support informed decision-making and improve the uptake of FOGO compost in procurement. This includes clearly articulating the cost-benefits to the industry and demonstrating these benefits against BAU practices.

7.1 Factors limiting the use of recycled compost

FOGO compost remains peripheral because many organisations do not yet connect it to outcomes that matter, including plant establishment and survival, irrigation and fertiliser demand, maintenance effort, and stormwater performance, and therefore do not specify it as a performance tool. The assurance pathway is also not consistently embedded in contracts: responsibilities for blend selection, testing and acceptance thresholds are often undefined, and documentation requirements are patchy.

In that vacuum, tenders and estimators' price to the familiar and delivery teams manage risk by sticking with known mixes. Large infrastructure programs amplify this inertia, as any change to specifications can trigger revisions to verification plans, supplier prequalification and surveillance regimes, work that teams avoid unless there is a clear mandate. Limited local cost/performance data and lingering contamination concerns then reinforce caution, producing a structural bias toward business-as-usual even where compost would likely improve whole-of-life value. The table below outlines the limiting factors within each stakeholder group:

Stakeholder group	Limiting factors and barriers
Property and infrastructure sector	• Direction on specifications and technical requirements for soil and FOGO compost is an education gap for many project managers. • There is limited awareness on case studies that have successfully trialled FOGO compost with clear cost-benefit outcomes (e.g. limiting fertiliser use). • FOGO compost is a new product for them and would require testing and awareness of positive commercial and rating tool credit outcomes. • Tightly controlled specifications and conformance regimes make any change difficult.

	• Unless compost and soil tests are specifically required, teams default to business as usual.
Landscaping industry	• Landscapers, especially as subcontractors, must meet the tender and contractual specification requirements for soil and recycled soil to be used in a project, and often at a competitive pricing schedule. • Whilst soil tests are best-practice, use is limited as it is considered an added expense by project managers. • It is typically the landscaper's responsibility to procure soil and determine the soil blend based on project location and needs. Blends are often determined by the landscaper; it is not an industry framework. Landscapers may meet AS specifications if committing to best practice but there are no clear frameworks for blenders to follow if they were to integrate FOGO compost. • Contractors prioritise predictability and cost effectiveness.
Local councils (and Regional Council Bodies)	• Councils are supportive in principle but are risk averse to new products and contamination concerns. • Councils have constrained maintenance budgets that generally drive conservative choices. • Planning instruments are ineffective and difficult to change (DCPs) and are often overridden by higher-order priorities (State led). • Contamination is a critical issue (e.g. PFAS) for councils. Councils want to avoid community and media backlash from contamination in urban precincts.

Across these groups the pattern is consistent: limited familiarity with both the practical benefits and the assurance pathway, combined with unclear responsibilities and a lack of locally credible cost/performance data, suppresses demand. Until those gaps are closed, FOGO-derived compost will struggle to move from "allowed" to expected in NSW urban landscaping.

Collaborative trials and pilot projects are an effective method to incentivise buy-in from large property and infrastructure companies. Marketing, campaigns, conferences, and industry forums can help to demonstrate pilot trial outcomes to ensure a trickle-down effect across the built environment industry. This requires effective and clear metrics and communication of the commercial benefits to the project outcomes against perceived risks. Furthermore, these trials need to demonstrate how soil standards and specification requirements were utilised consistently to ensure contamination was minimised. This includes ease of implementation for the project manager and landscaping contractors, not impacting BAU.

7.2 Levers to incentivise uptake in FOGO compost utilisation

Additional levers are required to uplift, drive, and underpin new procurement methods and business-as-usual within the built environment. The development of these levers will require cross-collaboration and ensuring education pathways are clear and achievable for all stakeholders and relevant to their specific sector.

The key levers that could be integral in underpinning this process and strategy are listed below:

- **Government policy:** providing outcome-based requirements to influence council procurement decisions for FOGO compost. This could include mandatory minimum standards for compost use depending on an area or type of land. As an example, this might be various percentage blends that utilise FOGO compost with reused soil from the site. However, these are dependent on the site which may include reused blends, structural soil blends (for footpaths or streetscapes), low-density soil for rooftops, or turf blends for sports fields or lawns. Introducing recommended FOGO compost blend types for these land types across the built environment can help secure long-term use of FOGO compost.
- **Innovation funding:** support infrastructure trials and development of FOGO compost through innovation funds or pilot programs.
- **Price-quality and subsidy models:** work with suppliers to support council urban development projects with subsidies for the procurement of FOGO compost. Subsidies help reduce risk of large investment in an unfamiliar product, stimulate supplier investment and build market momentum. Once proven as a product for the user, procurement and operations team have habits of use, contractual systems setup, and supplier relationships have matured and are stable.
- **Nature, climate and emission reduction outcomes:** align a clear framework that has clear connections between positive end-product for increased biodiversity, emission reduction (carbon sequestration), and mitigating climate risks through stormwater retention and low-carbon procurement.
- **Whole-of-life cost-benefit analysis:** use trials to quantify and demonstrate the long-term cost effectiveness of FOGO compost that minimises landscaping soil maintenance, over-reliance on fertilisers, and water irrigation.
- **Support update of FOGO Compost standards in NSW:** support or fund new standards or sub standards (AS 4454) to be developed for contamination pre-screening and blending mixes (%) for various land-applications of FOGO compost. By collaborating with federal Australian Standard specifications, NSW can work with other-leading FOGO states (e.g., SA, WA) to stimulate the development of FOGO compost use and standards that can be mirrored across state and territory governments.
- **Connect sustainability outcomes with credit rating tools:** collaborate with GBCA and ISC to establish data-driven KPI's for developers, asset managers, or Tier-1 Infrastructure organisations to meet regarding emission reduction, nature impacts, and climate.
- **Landscaping factsheet and guidance:** upskill and provide a factsheet or small guidance document for landscapers to follow which addresses the procurement of FOGO compost in NSW specific supply chains.

7.3 Education uplift and opportunities

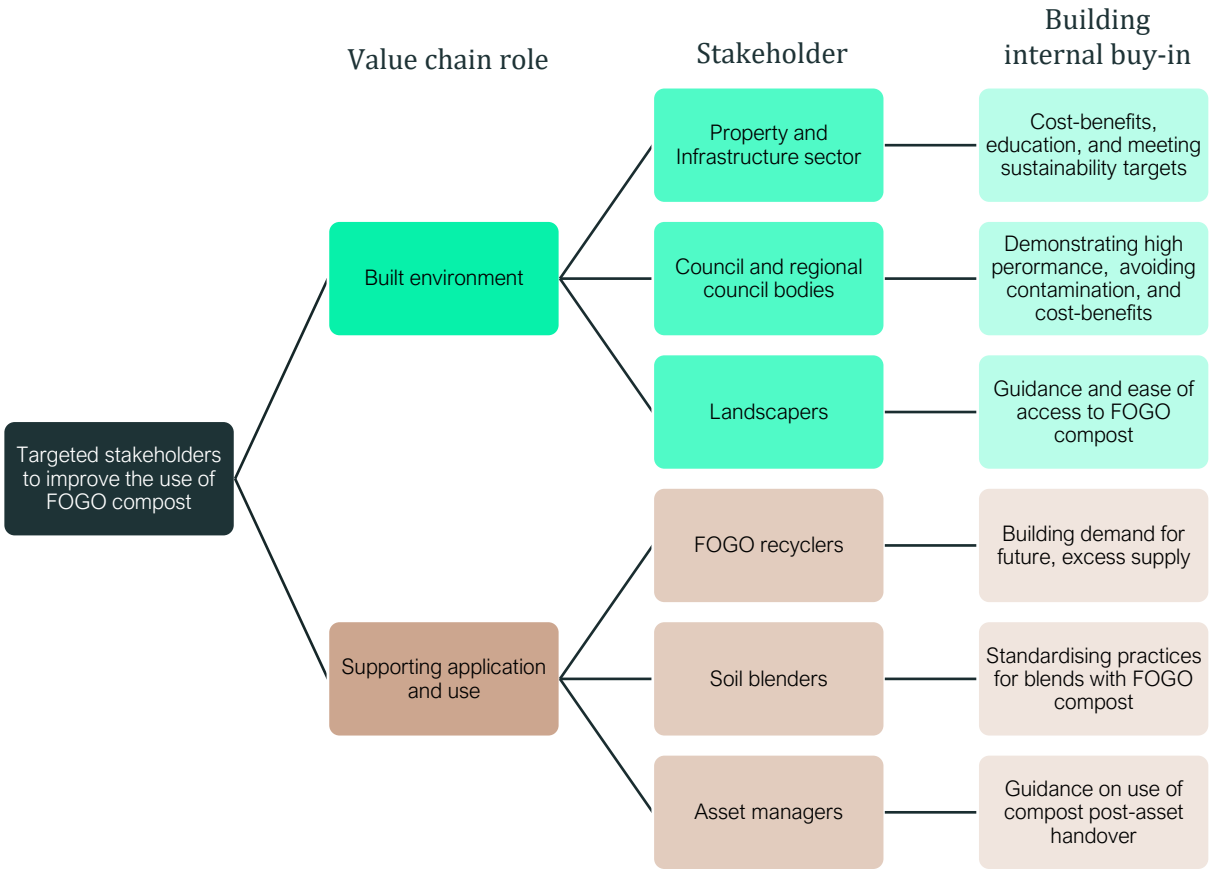
Expos, conferences, or grant opportunities for pilot programs are premium pathways to communicate, act upon, and reflect on the learnings and performances of FOGO compost in urban development projects. Going beyond online resources and targeting stakeholder led events can prove fruitful in expanding growth and demand. Examples need to be practical, evidence-based, and easy-to-implement. While this may be driven by the compost industry in order to sell their product, many stakeholders interviewed as part of this project outlined the amount of marketing they receive for alternate products, and that when case studies, presentations, and marketing ploys are driven by the company trying to sell the product, it's not seen as genuine as a government body encouraging an alternative method through unbiased facts and project examples.

Within each sector, communication and education could focus on three major priorities to encourage buy-in. These include:

1. **Pathways or frameworks:** to source, manage, and deliver FOGO compost effectively without impediments or the risk of contamination.
2. **Data driven outcomes**: highlight potential cost-savings from long-term projects through water and fertiliser reduction. This could also include the positive climate/nature outcomes that are becoming increasingly material in supply chains. This includes carbon emission reduction (and sequestration).
3. **Grants and pilot collaboration initiatives:** develop avenues for the infrastructure sector, councils or landscapers to collaborate across the value chain. For example, the infrastructure sector could have specific guidance, frameworks, and case studies to refer to that cover compost application to various soil and plant types. This would act as a source of truth for the specific sector, while simultaneously demystify any concerns around composts high organic content and its effects on native Australian plants.

7.4 Engaging stakeholders to achieve buy-in

Education programs, as well as grant and funding opportunities, are proven pathways to develop internal buy-in across the FOGO compost value chain. Listed below are the key stakeholders who appear across the value chain relevant to upstream procurement of FOGO compost or downstream application and use.



7.5 Incentivising the built environment through ratings tools

The ISC and GBCA provide rating tool credits to highlight and incentivise sustainability efforts and initiatives attributed to urban development projects. Both credit tools can be activated as levers to encourage the adoption and use of FOGO compost as sustainable innovation. The EPA can seek to collaborate with both the ISC and GBCA to update or introduce new credits that include FOGO compost.

Infrastructure Sustainability Council rating tool and applications:

The ISC is a peak industry body that provides the infrastructure sector with an ISC Rating Scheme to assess and certify the sustainability credits for assets during planning, design, construction, and operations. Aligned with United Nations Sustainability Development Goals (UN SDG's) and supporting ESG reporting, sustainable finance, and procurement frameworks, the IS Rating Scheme has certain credits that could be adapted to include FOGO compost.

ISC relevant credits[9] and topic areas are identified below:

Recycled content and circular materials	Mat 1 - Materials lifecycle impact measurement & reduction
	Mat 2 – Environmentally labelled products & supply chains
Embodied carbon and carbon emission reduction	Ene 1 – Energy and carbon monitoring & reduction
	Ene 3 – offsetting residual emissions
Reducing potable water & water efficiency	Wat 1 - Water use monitoring & reduction
	Wat 2 – Replace potable water
Mitigating biodiversity loss	Lan 3 – Land management and natural habitats
	Eco 1 – Ecological protection and enhancement

Certain credits may be more materially relevant to FOGO compost. These can be explored and addressed to involve Innovation Credits (2.1/2.2) and Resource Efficiency Plans for circular economy (RSO 1). The EPA can collaborate with the ISC to introduce compost to these existing credit systems to drive use across the built environment. This should include:

1. Collaborate with a ISC Technical Working Group
2. Demonstrate positive environmental metrics from FOGO compost from research and case studies.
3. Determine credits which require revisions
4. Present to the relevant ISC Technical Working Group to support amendments to the current rating schemes.

Green Building Council Australia rating tool and applications:

Green Building Council Australia (GBCA) provides an environmental assessment for commercial office buildings across their lifecycle stages: design, as-built, interior, and existing building. The GBCA's assessment sets a best-practice benchmark of 6 stars for organisations to assess their sustainability

[9] Infrastructure Sustainability Council. As of 2025. *'Resource Use Tool'.* < https://www.iscouncil.org/listing/resource-use-tool/ >

impact for an asset development – titled Greenstar[10]. Similar to ISC, GBCA also acts as an advisory, educator, and collaborator across the sector to uplift sustainability outcomes.

GBCA's assessment pillars have pivoted with market development, since their inception in 2002, to include more carbon emission reduction and circular economy[11] components. Both these suite of components support the delivery of Climate Positive Roadmaps for new buildings and responsible procurement of low-impact materials.

FOGO compost is not currently considered or articulated within GBCA's Greenstar rating tool. Compost studies within GBCA are limited, and contextualising their benefits and contribution to sustainability metrics will require internal buy-in from GBCA's 'Technical Advisory Group. This would require clear, quantifiable benefits for the built environment and the problems FOGO compost can solve through circularity, carbon sequestration, and future supply demand.

Integration of FOGO compost in GBCA's credit rating Greenstar Points system could be assessed and evaluated within the following frameworks: low-carbon credits, nature/biodiversity enhancement credits and/or innovation point/schemes (such as leadership challenges). These would be primarily focused on specific stakeholders that could include, but are not limited to: developers, builders, and product suppliers.

GBCA's Technical Advisory Group would need to receive an overview of five relevant metric points to constitute an amendment or upgrade of current credit rating[12] schemes for Greenstar – ensuring the introduction of FOGO compost. These include:

- Control of outcome
- Scale of impact
- Transformation potential
- Length of impact
- Value generation

The EPA or a selected partner could present research and collaborate with the GBCA and ISC to present the use-case scenario for FOGO compost across both rating systems and tools. Both credit rating systems are utilised by the built environment to enhance the value of their commercial buildings to investors and future clients. Integrating FOGO compost credits can help to encourage and scale procurement across large organisations with sustainability targets.

7.6 Sustainability targets as a lever

FOGO compost in the built environment can act as a lever for larger organisations and councils to implement and meet their sustainability targets[13]. Especially within the private sector, ESG targets and reporting are often public commitments. This sector will often achieve sustainable innovations as they are on the front-line of large built environment projects that also seek to achieve GBCA and ISC credits. Their targets or commitments will often include:

- Increasing the use of recycled content
- Carbon emission operational reduction (scope 3)
- Adhere to sustainable and ethical goods and service procurement (ISO 20400)

[10] Green Building Council Australia. 2006. *'Green Building Council of Australia Submission August 2006.* Inquiry into a Sustainable Charter.
[11] Green Building Council Australia. 2022. '*Our strategic Focus'.* < https://www.gbca.au/about/corporate-reports/our-strategic-focus >
[12] Green Building Council Australia. 2025. *'Green Star FAQ's'.* < https://www.gbca.org.au/faqs.asp?action=details&faqId=374 >
[13] EPA & Edge Impact. 2022. '*Cool Compost Research'.* Cool Compost. <https://circularag.com.au/wp-content/uploads/2022/09/Cool-Compost-landscapers-and-urban-designers-factsheet.pdf >

- Prioritise low-carbon materials
- Reduce the volume of embodied carbon
- Achieve no net loss of biodiversity
- Reduce potable water consumption

The targets listed above are examples that will be typically aligned with large organisations. These may require constant refining as ESG commitments evolve, reporting systems change (e.g. ASRS, TFND), and data management improves. As the private sector is on the front-line of sustainable materials and innovation, they have the ability to have sector-wide influence. This trickle-down effect is an applicable pathway to help organisations meet their sustainability targets and commitments by using FOGO compost. Furthermore, regulatory reporting standards are becoming more material to these organisations (e.g. Australian Sustainability Reporting Standards - ASRS – mandatory and Taskforce on Nature-Related Financial Disclosures - TFND – voluntary). These include required governance pathways for organisations to reduce their emissions (ASRS) and improve biodiversity outcomes (TNFD) across assets and operations. All large organisation stakeholders that were interviewed commented on the need to align with these sustainability-based targets for compost to be material to a project from the outset.

Clarifying these barriers and leverage points provides the basis for identifying practical pathways to embed compost in urban development.

8. Case studies – Real-world applications

Examples from Australia and overseas show how compost has been successfully applied to deliver strong environmental and performance outcomes, providing clear evidence of what is achievable in NSW with the right enabling settings.

During the research development phase, three case studies were evaluated to highlight the performance of compost in urban development projects and their relevance to Metro NSW. Each case study reviewed four key outcomes of compost procurement and implementation.

- Compost use (type, method, volume)
- Implementation approach
- Outcomes and lessons
- Relevance and implications for NSW and Sydney Metro

An additional case study, listed below, was extracted from a separate interview with Arcadis that details the use of compost in Western Australia's 'Byford Rail Extension'.

8.1 Byford Rail Extension - Western Australia

This case study explores the key levers that resulted in the use of a 20% compost and 80% Aquaform blend to support vegetation growth. This includes the relevant organisational inputs utilised to setup the trial. The outcomes from this project ensured Development WA were able to achieve credits through the ISC.

Levers utilised:

- The Western Australian (WA) Government set KPIs for circular principles and recycled content. FOGO compost provided a viable opportunity to address this mandate[14].
- An initial small-scale trial was conducted to test applications prior to wide-spread project application.
- The WA Government provided funding to secure FOGO compost despite initial pushback from developers and landscapers – as part of the Byford Rail's Sustainability Charter.
- Requested compost suppliers trace their supply chain.
- Initial pushback and negative perceptions towards compost were whether blending compositions might kill native plants.
- Utilised primarily in planting beds rather than high-cost areas (e.g. expensive trees). Byford tested multiple blends (100 | 60/40 | 40/60 etc).

Soil benefits:

- Minimised the use of artificial fertilisers due to the rich compost organic matter.
- Improved water retention and penetration, reducing water consumption. Water use was cut by 38% and reduced irrigation by 77%.
- Compost boosted soil microbes, enhancing soil stability.
- Growth of native plants attracted biodiversity in the local area, such as kangaroos, compared to areas without compost.

Cost assumptions:

- Soil tests are required in large-projects – they can also be simultaneously utilised to test AS standards to determine the right specs for compost.
- Reduced reliance on costly fertilisers and water irrigation.
- FOGO compost was cost neutral compared to BAU soil. FOGO compost was cheaper but required additional costs for the 20/80 blending[15].

[14] Metronet. 2025. *'FOGO Initiative: Transforming waste into growth'.* Western Australia Government. < https://www.metronet.wa.gov.au/news/latest-news/fogo-initiative-transforming-waste-into-growth >
[15] MetCONNX. 2024-2025. *'Sustainability Report 2024-2025, Metronet Byford Rail Extension Project.* Annual Sustainability Report.

8.2 OneOneFive – Western Australia[16]

Background and context:

- OneOneFive Hamilton Hill (WA) is a DevelopmentWA residential development – prioritising the trial and showcase of sustainable urban development practices.
- The landscaping strategy was designed to introduce circular design principles by specifying soil conditioner to be derived from locally sourced FOGO compost.

Implementation approach:

- Requirement for soil condition was contractual specified in the 'Landscape Technical Specifications' and contractors were expected to comply with AS 4454.
- One sample soil from the conditioner was assessed prior to use in a pilot test study.

Compost use:

- **Compost type:** soil conditioner
- **Standards:** met AS 4454
- **Volume used**: 390m^3
- **Application:** native trees planted with 15% soil conditioner mix | turf areas spread 50mm of compost soil conditioner across surface area
- **Handling and prep:** compost kept moist (minimum depth of 200mm) and had minimal time spent on site (to preserve microbes)

Outcomes and lessons:

- Visual assessments showed healthy plants and high survival rates.
- Improved level of water retention reduced reliance on fertilisers and increased canopy coverage.

Relevance to NSW Metro:

- Early contractual specifications were critical to increase the uptake of recycled compost
- Maintaining compost moisture helps retain microbial health and performance benefits
- Collaboration between developers and suppliers ensures smooth logistics and quality
- Procuring AS 4454 certified product streamlines the implementation process – reducing red tape.

[16] Waste Authority Western Australia. 2024. *'OneOneFive Hamilton Hill Landscaping Project.'* Sustainable Communities Case Study.

8.3 High Point Redevelopment Project – Seattle, USA[17] [18]

Background and context:

- The High Point Redevelopment Project in Seattle built 34 city blocks (120 acres) that included bioretention swales - linear vegetation channels.
- The swales, and other landscaping areas, utilised compost-amended soils to improve stormwater quality, mimic natural drainage patterns, and protect local biodiversity by filtering stormwater runoff.

Implementation approach:

- Landscaping specifications complied with SMC 20.60.310 (compost use) and integrated into the Landscape Maintenance Guidelines. This would ensure compost use was maintained during ongoing operations.

Compost use:

- **Compost type:** 100% compost mix
- **Standards:** met Seattle Municipal Code (SMC) 20.60.310 compost use in City projects.
- **Sourcing:** sourced from approved suppliers who met standard requirements.
- **Application:** applied in lawns (1 inch), swales (1-2 inches annually - 35% compost), compacted soils (2 inches), fill sand (60% compost).

Outcomes and lessons:

- Compost reduced the ability for weeds to be established, enhanced soil moisture, and replenished essential soil chemistry.
- Swales helped filter toxins from stormwater, improve High Points natural drainage system by 75-80% during stormwater runoff, and reduced stormwater into neighbouring creeks by 65%.

Relevance to NSW Metro:

- Compost-amended soils in bioretention systems improve filtration and pollutant removal – supporting NSW waterway protection targets
- Compost use can support biodiversity outcomes for estuaries and riparian corridors
- Co-benefits include reduced irrigation needs and enhanced drought tolerance
- NSW, like in Seattle, could embed compost requirements into planning/public work specifications – using procurement as a lever

[17] Seattle Housing Authority. 2010. *'High Point Redevelopment'*. Seattle Housing. < https://www.seattlehousing.org/about-us/redevelopment/high-point-redevelopment >
[18] High Point Community. 2010. *'Natural drainage and landscape maintenance guidelines for right-of-way and open space.* Design Company SvR.

8.4 Olympic Park – London, England[19] [20]

Background and context:

- The Olympic Delivery Authority (ODA) developed an engineered soil strategy in 2011 prior to the 2012 Olympic Games.
- The park, built on a heavily contaminated site, embedded a blended compost soil mix to increase the volume of organic matter and nutrient availability.

Implementation approach:

- ODA's sustainability policy mandated high recycled content and minimal BAU soil procurement
- Soil use was driven by BS 3882 requirements for organics matter and nutrients for soils manufactured offsite and pre-screening.

Compost use:

- **Compost type:** Compost blend (15-40%)
- **Standards:** met BS 3882 standard for nutrient content, pH, contaminants, and properties
- **Specifications:** 12 separate technical soil specifications per specific landscape use
- **Application:** Multi-purpose topsoil | Moisture-retentive topsoil | low-nutrient topsoil | high-permeability turf soils and urban tree sands.

Outcomes and lessons:

- Compost soil blends helped enhance organic matter levels, improve water retention, and nutrient holding capacity.
- The presence of compost benefited soil microbes and subsequent plant health and resilience.

Relevance to NSW Metro:

- NSW could adapt an equivalent compost inclusive topsoil in council mandated compost use
- State agencies can require recycled organics in landscape soil specifications for major development
- Compost use to help achieve rapid vegetation establishment
- Undertake further research on compost types and blend ratios to maximise nutrient loading and avoid risks such as leaching

[19] CityGreen. 2012. *'Designing a soil strategy: grounding the Olympic Park.'* Parks & Landscapes. PP 62-69. Issue 6.
[20] Guidbert, E. & Tostevin, A. 2022. *'The fictional soils of a 'sustainable' Anthropocene: A new materialist story of the soils of the Queen Elizabeth Olympic Park.'* Journal of Landscape Architecture. Vol.2. PP 76-89.

The lessons from these examples highlight the enabling conditions needed for successful adoption and reinforce the importance of addressing systemic challenges.

9. Procurement, education, guidance, and market development

Practical mechanisms for integrating compost into business-as-usual procurement and design processes become clearer once the system-wide barriers are understood.

How landscaping is procured on major projects (property and infrastructure)
On large projects, landscaping is typically locked in through a competitive procurement process run by the lead organisation—either a developer/asset owner (property) or a delivery agency/program owner (infrastructure). The client sets a brief and performance requirements during concept and design development, often embedding technical specifications and any sustainability expectations. Procurement then proceeds via an EOI/RFQ/RFT to prequalified head contractors (property) or to consortia/Tier-1 contractors (infrastructure). Bids respond to defined landscape outcomes and are competitively evaluated, with a significant weighting placed on price alongside non-price criteria such as technical conformance, program, risk, safety and sustainability.

Head contractors typically package landscaping as a specialist subcontract. Landscape subcontractors, in turn, source soils and amendments (including compost) from blenders/suppliers. Unless compost requirements are clearly stipulated in the tender documentation—e.g., minimum recycled content, blend ratios by application and soil type, QA/acceptance criteria to recognised standards—bidders will default to familiar, lower-risk inputs to remain price-competitive. Value-engineering stages can also remove non-mandated items late in procurement.

For FOGO-derived compost to be adopted reliably under these conditions, it must be:

1. Named in the specification with simple, project-appropriate “recipes” and handling rules
2. Supported by QA requirements (batch testing, supplier assurance, acceptance thresholds) that contractors can cost and plan
3. Recognised in evaluation criteria so compliant bids are not disadvantaged on upfront price alone.

Where these elements are present, head contractors can pass clear requirements to landscape subcontractors and suppliers, enabling consistent pricing, scheduling and quality control through shop drawings, inspection and test plans, and hold points during delivery and handover.

It is worth noting the variations in procurement pathways, typically varied by contract value:

- For minor works (generally <$50,000), clients may directly engage a single subcontractor to deliver supply-and-install
- For medium-value packages (≈$100,000+), a head contractor commonly manages specialist subcontractors while the client assumes a governance/contract-management role.
- For higher-value projects (≈$200,000+), delivery frequently transitions to a design-and-construct arrangement with a clear delineation of design and construction responsibilities, whether within one entity or across separate firms (thresholds indicative and agency-specific).

9.1 Infiltrating current procurement practices:

As outlined above, current procurement for landscape works largely follows business-as-usual tender requests and responses (dependant on project size). Landscape scope is typically packaged by the head contractor and appointed to a specialist subcontractor who supplies and installs plants, soils and amendments, mulch, irrigation and maintenance during the defects-liability period. Australian Standards (e.g., AS 4419 for landscaping soils and AS 4454 for composts/soil conditioners) may be referenced, but interpretation and testing regimes are inconsistent. Tender evaluations are commonly price-weighted, which encourages familiar inputs and discourages alternatives that are not explicitly required. In this environment, compost will rarely appear unless it is clearly specified and supported by straightforward QA and acceptance criteria (e.g., Western Australia Byford Rail Upgrade).

Roles and responsibilities are relatively consistent across property and infrastructure projects. The client (council or developer/asset owner) sets the brief and issues the procurement documents; the head contractor manages delivery and packages landscaping; landscape subcontractors select blends and coordinate testing (when required) and are usually responsible for establishment and maintenance for 12–18 months; soil blenders/suppliers manufacture to specification and provide test certificates; and asset managers take responsibility at handover for ongoing upkeep and performance. Ambiguity about who tests what, and when, is a recurrent barrier; when not stated in the contract, it is often omitted or value-engineered late to meet budget.

To move from BAU to consistent use of FOGO-derived compost, the procurement pathway needs clear insertion points where expectations are defined and then protected through evaluation, contracting and delivery. The most effective points of influence are:

- **Project brief and concept design:** state desired performance outcomes (e.g., soil health, plant establishment, reduced irrigation) and identify where compost is expected to be used.
- **Design and technical specifications:** include simple sub-standards (“recipes”) by soil type and application; reference AS 4454/AS 4419 and set acceptance thresholds, test frequency, and responsible parties; include basic handling rules (moisture, curing, depth, placement).
- **Tender/RFQ evaluation:** make compost requirements mandatory or include explicit non-price criteria so compliant bids are not disadvantaged on upfront price; request method statements and provisional rates for composted blends to avoid late substitutions.
- **Contracts and inspection and test plans**: insert hold points for sampling, delivery verification and placement; require supplier certificates of compliance and batch test results; clarify defect-liability responsibilities for plant replacement and establishment watering.
- **Handover and operations and maintenance:** require inclusion of compost-related maintenance instructions and monitoring (e.g., survival counts, irrigation volumes) so benefits persist beyond practical completion.

Public-sector buyers (councils, agencies) can reinforce adoption through procurement policies, for example, buy-recycled preferences, minimum recycled content for landscape media, or prequalification panels of assured suppliers, while private owners can embed the same expectations in portfolio standards and employer’s requirements. For infrastructure, alignment with IS Rating evidence needs and project sustainability charters helps protect compost in value-engineering stages; for property, Green Star recognition can reinforce, but not replace, clear specification language in contracts.

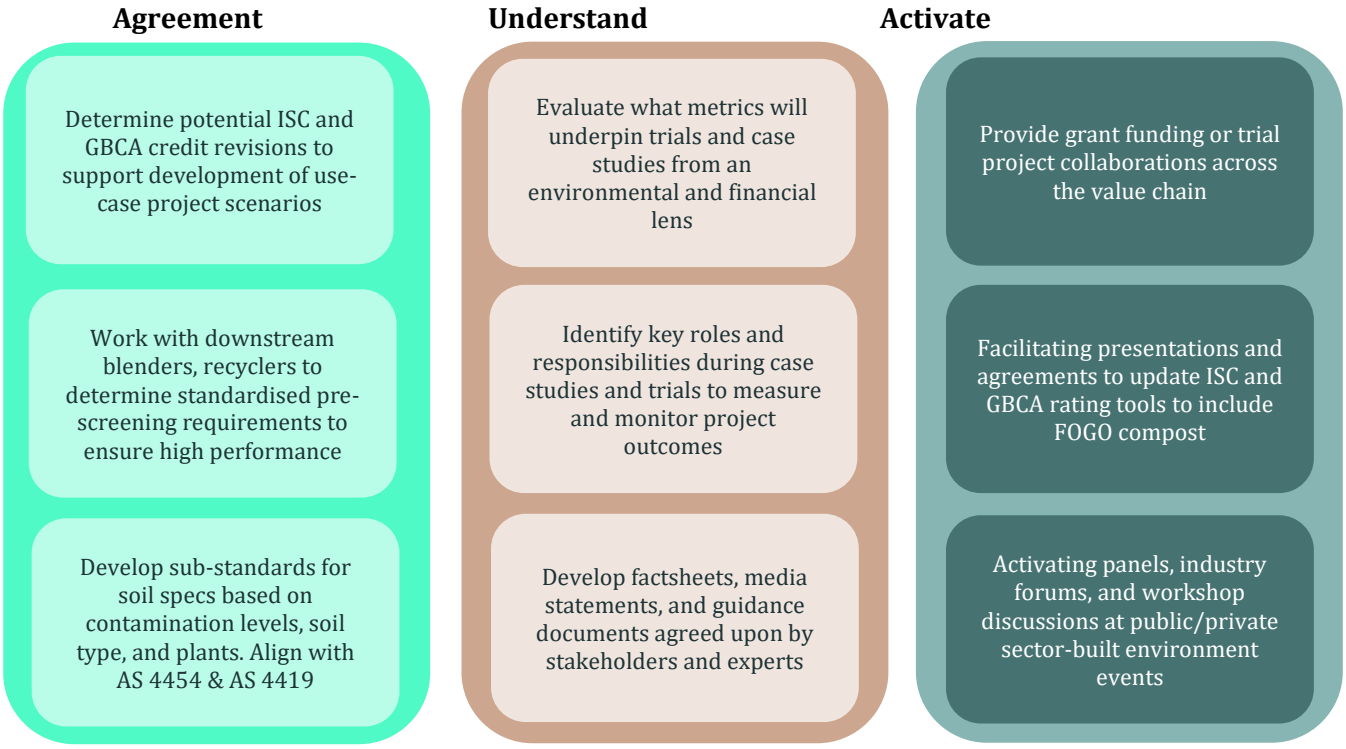
Moving the market also requires a shift in the perceived value proposition. Compost must be positioned as a performance and cost lever rather than an optional “green” add-on. This is best achieved by pairing procurement changes with monitored pilots that demonstrate net CAPEX/OPEX

benefits; plant survival and re-planting rates, irrigation and fertiliser reductions, and maintenance effort, so estimators and contract managers can price with confidence.

Agreement - Understanding - Activation (three-tier pathway):

Three-tier pathway	Actions
Agreement	Publish short, standardised guidance - sub standards blend ratios by soil type and use, QA/acceptance criteria aligned to AS 4454/4419, and model specification and procurement clauses. This creates shared terminology across clients, designers, contractors and suppliers.
Understanding (capability and frameworks)	Deliver targeted education and CPD for designers, contract managers and site supervisors; clarify who tests what and when; map how compost use interacts with evaluation frameworks (IS Rating for infrastructure, Green Star for property) without over-relying on them as the only incentive.
Activation (make it easy to adopt)	Embed compost in live procurements through mandatory requirements or weighted non-price criteria; establish standing panels or approved supplier lists; fund or permit safe-to-fail pilots within contracts; require simple monitoring so results feed back into future briefs and specs.

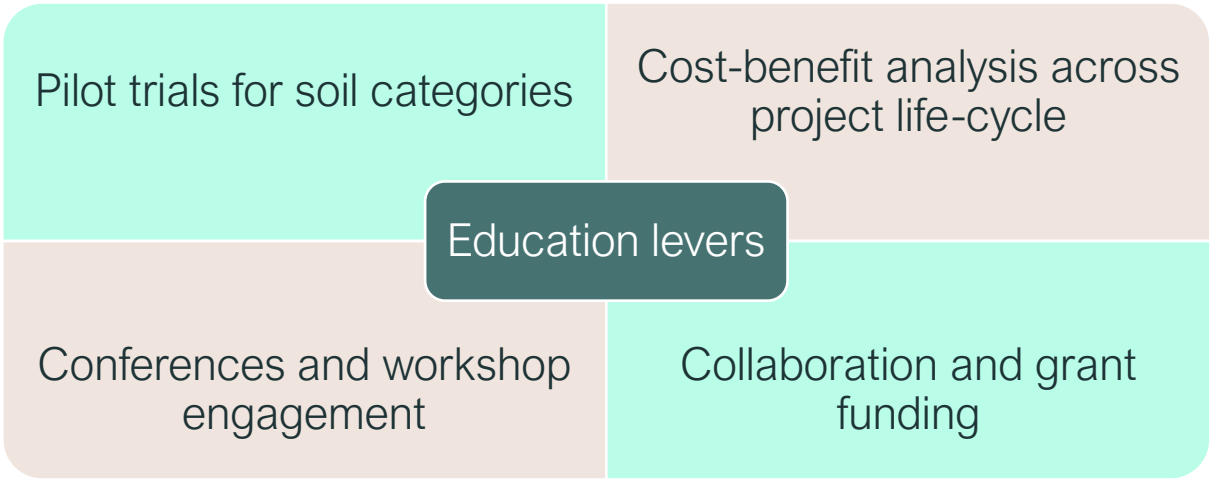
Sustained collaboration will speed adoption and reduce delivery risk. EPA, councils and asset owners can use existing channels; major industry expos and conferences, NSW Government roundtables, regional organisation of councils (ROC) forums, and university-led upskilling sessions to demystify compost use, share pilot results and normalise the sub-standards and QA expectations. These forums are also practical venues to test draft clauses, compare monitoring methods and align evidence needs for IS Rating and Green Star where relevant. Visibility and trust are critical: when suppliers, designers and contractors see clear requirements, credible data and consistent client messages, they can plan logistics, price confidently and deliver at scale.



9.2 Bridging the education gap

Building on the procurement dynamics outlined above, particularly the prevalence of price-weighted evaluations, the role of contractor ITPs, and the need for clear O&M expectations, there is a parallel need to close an education and evidence gap across client, design and delivery teams. Integrating FOGO-derived compost into supply chains will only gain consistent traction if early adopters can point to simple benchmarks, credible performance data and straightforward 'recipes' that make procurement easy and risk transparent. To reach the right stakeholders, as mentioned in section 6 and 7, it is recommended that the EPA attend and host workshops, panel discussions, or forums at industry led events for the property, infrastructure, and council sectors. This can build traction in the built environment where case studies can be shared, and questions answered across the industry. New innovations are distilled within an organisation once trials are proven and successful. Creating buy-in for trials are key for long-term use and application of FOGO compost.

Through stakeholder engagement, both public and private organisations identified several levers that would encourage adoption. These levers are designed to demonstrate net benefits in both capital expenditure (CAPEX) and operating expenditure (OPEX), while translating standards into day-to-day specification and delivery practice.



- **Pilot trials:** Run tightly scoped trials that test compost use across relevant soil types and applications (e.g., council streetscapes, bioretention swales, commercial landscape beds), with clear objectives, blend ratios, QA steps and measurement plans. Pilots should be structured to surface and resolve supply-chain and procurement bottlenecks before scale-up.
- **Life-cycle cost–benefit analysis:** Accompany pilots with a simple whole-of-project analysis comparing business-as-usual to compost-amended practice, covering establishment costs, irrigation and fertiliser inputs, plant survival/replacement rates and maintenance effort. Publish results in short case packs so estimators and contract managers can price with confidence.
- **Conferences and targeted workshops:** Use industry forums (government roundtables, council and ROC meetings, industry expos, university programs) to share live case studies and translate sub-standards and QA expectations into practical steps for designers, contractors and asset managers. Prioritise sessions that walk-through specifications, ITP checkpoints and O&M implications.

- **Targeted funding mechanisms:** Employ grant funding or buy-recycled procurement preferences to de-risk early adoption, tying support to pilot participation and transparent reporting. Councils may also explore buy-back or fixed-rate arrangements with recyclers to stabilise initial pricing and improve planning certainty.

Together, these actions pair evidence with ease: they demonstrate measurable performance and cost outcomes while providing clear, adoptable instructions that fit comfortably within existing procurement and delivery processes.

10. Risks, quality assurance, and safeguards

While education and capability gaps are a major barrier, stakeholders also emphasised a set of commercial and physical risks that must be managed if FOGO-derived compost is to be adopted at scale. Concerns centred on product quality and consistency, contamination risk (particularly PFAS and other POP's), performance variability across soil types, and uncertainty about roles and responsibilities for testing and acceptance. In most organisations, these risks are not yet addressed by clear, contractable processes; the result is hesitation and defaulting to business-as-usual inputs. A structured quality-assurance (QA) approach, grounded in recognised standards and supported by transparent assurance from suppliers can materially reduce perceived and actual risk.

Stakeholders consistently identified four prerequisites for confidence:

- product standards that are referenced and enforced
- soil testing and pre-screening of blends backed by supplier assurance
- contamination controls with clear acceptance thresholds and escalation paths
- validation of blends by application and soil type so designers and contractors can select with confidence.

For councils in particular, contamination has become a salient public issue: recent national media coverage has amplified community concern about PFAS and POPs, and those concerns readily transfer into the urban amenity context. In this environment, even isolated incidents elsewhere can erode trust locally unless public buyers and their delivery partners can point to robust quality assurance, traceability and monitoring. In Western Australia, a regional council south of Perth was found to have sold PFAS contaminated soil to suppliers[21] in 2025. This enveloped FOGO programs in controversy and deflated trust in compost efficacy and viability within urban environments.

Compost quality and safety are not the only considerations. Performance risks arise when blends are mismatched to purpose (e.g., over-amended media in bioretention, or insufficient organic content in compacted beds), or when handling on site undermines product integrity (e.g., drying, contamination during storage, or depth/placement errors). These are addressable through clear specifications, simple recipes by soil type and application, and inspection and test plans (ITPs) that set hold points for sampling, delivery verification and placement checks. Taken together, these safeguards materially reduce the likelihood of environmental harm and commercial fallout while normalising the use of compost as a reliable, spec-driven input.

10.1 Safeguard mechanisms

A practical safeguard framework should start with standards alignment and extend through supplier assurance, contractual QA, and site practice. These mechanisms could be developed through a pilot project for each industry and adapted into formal frameworks and guides:

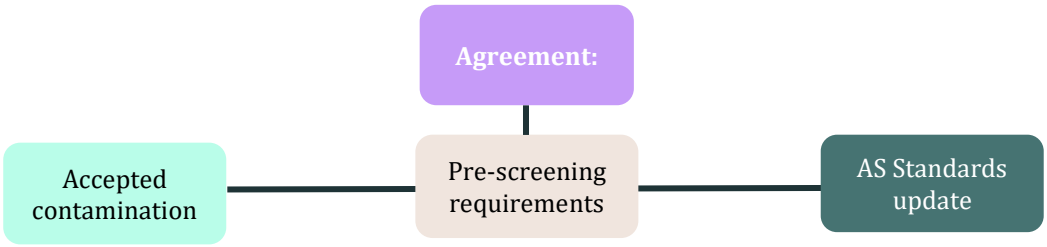
- **Standards and acceptance criteria**: Reference recognised standards (e.g., AS 4454 for composts/soil conditioners and AS 4419 for landscape soils) and translate them into project-specific acceptance thresholds for contaminants and physical properties. Where guidance exists for PFAS/POPs screening, state the thresholds, sampling methods and laboratory requirements explicitly.
- **Supplier assurance and pre-screening:** Pre-qualify suppliers and require batch test certificates for each delivery lot. Set minimum sampling frequencies, define chain-of-custody and traceability, and require disclosure of feedstock variability. Where appropriate, consider

[21] McArthur, B. & Williams, A. 2025. *'PFAS-contaminated compost sold to public, WA environmental regulator confirms'.* ABC News.

independent recycled-content or environmental product certifications (e.g., recognised Australian ecolabels) to reinforce confidence.

- **Application-specific validation ("recipes"):** Publish simple blend tables by soil type and use (e.g., sandy coastal soils, compacted subgrades, native planting beds, bioretention media) and pair them with handling rules (moisture, curing, storage, placement depths). This reduces performance variability and simplifies contractor pricing and planning.
- **Contractual quality assurance and inspection and test plans (ITPs):** Embed QA obligations in contracts and ITPs withhold points for pre-delivery sampling, on-arrival verification, moisture/contamination checks, and post-placement depth/compaction confirmation. Assign responsibilities (designer, contractor, supplier, superintendent) so testing is performed and documented rather than assumed.
- **Operations and Maintenance (O&M):** Include compost-specific O&M instructions at handover, including watering regimes, fertiliser policy (often reduced), weed management, top-up intervals, and survival counts at 3/6/12 months. This is so benefits persist beyond practical completion and can be measured.

Introducing more rigorous screening and testing may create short-term procurement and logistics friction; however, stakeholders viewed this as an acceptable trade-off to establish a credible baseline that protects programs from reputational harm and enables scale. Over time, as suppliers and delivery teams standardise around clear expectations, assurance becomes routine and transaction costs fall.



An additional safeguard mechanism that has proven validity in circular economy value chains are procurement certifications. Recycled content certifications can improve consumer and sector confidence of the end-product and translate to internal assurance in the private sector.

This could follow Australian certifications such as ReMade Australia, ACO Certification, or GECA certification pathways and auditing assurance.

10.2 Commercial and physical risks

FOGO compost can have inherent physical risks to both the surrounding soil and environment where it is applied. Similarly, commercial risks lie in social continuity and trust within both the private and public sector in the case of PFAS or POP's contamination.

Physical risks relate to the receiving environment and include the potential for contaminant exceedances, unintended impacts on soil structure and hydraulic function if blends are poorly matched, and human-health issues associated with dust or mishandling on site. Without safeguards, these risks could manifest as reduced plant performance, off-site movement of contaminants, or costly remediation.

Commercial risks centre on program credibility and market confidence. Perceived or actual contamination incidents, even if rare, can diminish end-user demand, create surplus material with few outlets, and invite media scrutiny. For public purchasers, this translates into reduced trust in council projects and land rehabilitation programs; for private delivery teams, it can affect competitiveness in future procurements and increase the likelihood of conservative specifications that exclude beneficial recycled content.

Physical risks[22]	**Commercial risks**
1. Inorganic metal contamination of nearby waterways 2. Local fauna and flora are at risk to organic bioaccumulation of toxic materials 3. Damage soil structure and properties – such as water holding capacity and density. 4. Dust from soil can pose risks to human health.	5. End-user market for compost is diminished, creating excess FOGO compost and a cost-negative market for recycling FOGO. 6. Trust in council projects and land rehabilitation will be reduced. 7. Built environment sector users could face media backlash, trust validation, and loss on future RFQ opportunities in the urban development market.

These risks can be actively mitigated by pairing clear QA (standards, thresholds, testing responsibilities), transparent supplier assurance (certification, batch testing, traceability), and fit-for-purpose specification (application-specific blends and handling). When coupled with monitored pilots that publicly report plant survival, irrigation and fertiliser inputs and maintenance effort, buyers and contractors gain the evidence they need to evaluate whole-of-life costs and to defend adoption decisions. Managing risk in this way demystifies the product, neutralises asset risk, and provides the commercial clarity that procurement and project teams require to move beyond business-as-usual.

[22] Cattle, R. S. et al. 2020. *'The character and distribution of physical contaminants found in soil previously treated with mixed waste organic outputs and garden waste compost.'* Waste Management. Vol. 101. PP 94-1015.

11. Opportunities and implementation roadmap

Building a circular, demand-ready market for FOGO-derived compost in the built environment depends on three foundations:

1. trust, through clear standards and visible assurance;
2. education and visibility, through concise, NSW-specific guidance and case evidence;
3. value, demonstrated via cost-benefit results over a project life cycle.

Standardisation should translate AS 4419 (landscaping soils) and AS 4454 (composts and soil conditioners) into simple, project-ready recipes, with QA requirements and acceptance thresholds that designers, contractors and suppliers can apply consistently.

Early adoption may be accelerated by targeted financial levers (e.g. grants, buy-recycled preferences) and by recognising outcomes in relevant rating tools (IS for infrastructure; Green Star for property). As procurement practices catch up, EPA is well placed to convene partners, mediate technical issues, and host pilots that convert intent into repeatable practice. Not every initiative will be required in every context; EPA should sequence effort based on feasibility, partner readiness and expected impact.

11.1 Key opportunities and initiatives to consider

Soil specs and standards:

- Consider facilitating a short program to convert national standards into NSW-ready sub-standards and supporting guidance. The objective is to make adoption easy and low-risk for clients and delivery teams.
- Develop concise blend tables matched to typical NSW conditions and uses (e.g., sandy coastal soils, compacted subgrades, native planting beds, bioretention media). Pair each with handling notes (storage, moisture, curing, placement depths) and acceptance thresholds aligned to AS 4419/AS 4454.
- Produce a procurement factsheet for landscapers, designers and contract managers that explains how to select and verify blends, what tests to request, and where responsibilities sit in contracts and ITPs. These could be shared with councils to uplift education, awareness, and demonstrate performance standards to ensure contamination is avoided.
- Engage NSW transport and precinct delivery agencies (e.g., TfNSW and delivery partners) to review where compost-inclusive blends are appropriate in corridor and station landscapes, while avoiding over-generalisation of agency-specific specifications to non-agency projects.
- In the medium-long term, work with Standards Australia and industry to consider codifying compost-inclusive guidance within or alongside the relevant standards, informed by NSW pilot data and assurance practices.

Pilot trials across soil categories:

Pilots should be small, well-instrumented and representative, designed to generate credible performance and cost data and to resolve supply-chain frictions before scale-up.

- Establish pre-qualification and pre-screening requirements with recyclers and blenders so product entering pilots has traceability and current batch tests.

- Select two to four sites that span different soil contexts (e.g., coastal sand, clay/compacted fill, urban bioretention) and run side-by-side control vs compost-amended plots for at least 12 months.
- Where early bottlenecks arise (testing costs, logistics), provide targeted support—funding or technical assistance—to keep pilots on schedule.
- Invite one council and one infrastructure program owner to commit to an initial pilot and to publish the results (including cost signals) to support broader market confidence.

ISC and GBCA Rating Tools:

Rating tools can reinforce, but never replace, clear specification and QA.

- Encourage formation of a technical working group with ISC (for infrastructure) and GBCA (for property) to align evidence requirements and identify where compost-related outcomes (resource use, water, ecology, circularity) can be recognised.
- Provide standardised metrics (e.g., recycled content tonnages, irrigation and fertiliser reductions, plant survival) so project teams can translate pilot results into credit documentation.
- Offer short training briefings for asset owners and project managers on how to integrate compost evidence into rating submissions without burdening delivery teams.

Cost-benefit analysis across project lifecycles:

Adoption depends on demonstrating value relative to business-as-usual

- Undertake a structured cost–benefit study alongside pilots, capturing CAPEX and OPEX effects (materials, blending, testing, irrigation, fertiliser, plant replacement, maintenance effort).
- Map procurement cost drivers (e.g., fixed-rate supply contracts, minimum order quantities, testing fees) and identify opportunities for early price stabilisation (e.g., buy-recycled preferences, fixed-term rates with assured suppliers).
- Publish short, audience-specific case packs (councils, property, infrastructure) so estimators and contract managers can price with confidence.

Conferences, workshops and education uplift:

Targeted education converts standards into practice.

- Use existing forums; NSW government roundtables, ROC/council forums, industry conferences and university programs to walk through specifications, ITP checkpoints and O&M implications, not just high-level benefits.
- Deliver active or previous case studies for the use of FOGO compost in urban development projects at NSW industry conferences (public and private), industry events, and/or forums.
- Work with researchers, consultants or other relevant stakeholders to host and coordinate workshops with partners in the infrastructure sector to support internal buy-in.
- Continue to produce two-to-four-page factsheets tailored to each role in the value chain (client, designer, contractor, supplier, asset manager) that set out the financial, ESG and environmental rationale and the exact steps to specify, test and maintain compost-inclusive blends.

Grant funding:

Focused financial support can unlock early adopters and generate the evidence base.

- Provide public or private sector grants to reduce barriers to adoption within the built environment. These could be scaled as innovation grants that tie-in metrics that are relevant to ESG targets or ISC/GBCA credit rating tools.

- As listed in the Marsden Jacobs report – consider a cost competitive pricing structure to support initial buy-in beyond grants that could subsidise initial costs. This could also include subsidising initial soil tests or other barriers that create high initial CAPEX fees for organisations expanding their supply chain to use FOGO compost.
- Coordinate certain outcomes that are required for the grants e.g. X% use of FOGO compost; as well as plans to use the funding to build internal action plans, roadmaps, or internal studies within the organisation.

11.2 Cost-benefit analysis factors

Based on stakeholder interviews and research on compost, a cost-benefit analysis between FOGO compost and BAU soil blends can be a valuable output to engage the private sector, and to an extent, the public sector. Project managers are likely to prioritise proven innovation that has opportunities to lower their costs by improving the efficiency and productivity of a product. A clear, decision-grade cost–benefit analysis (CBA) should accompany pilots so project managers can compare compost-amended practice with BAU on outcomes that matter to budgets and operations.

Design: For each site, establish matched control and treatment plots and monitor for 12 months (minimum). Use standardised data collection and independent verification where practical.

Inputs and costs to record:

- **Materials and logistics:** compost, blending, delivery, storage/handling, pre-screening/testing.
- **Installation:** placement time, depth and compaction checks, rework (if any).
- **Operations:** irrigation volumes, fertiliser applications, weed management effort.
- **Remediation:** plant survival and replacement counts at 3/6/12 months; corrective actions.
- **Ancillary:** any changes to soil health indicators that influence maintenance (e.g., organic matter, infiltration rate, bulk density, microbial activity).

Reporting metrics:

- **$/t and $/m^3 of installed media: $** per percentage plant survival; $ per hectare for establishment and maintenance over 12 months; variance in irrigation/fertiliser costs vs BAU; avoided re-planting cost.
- **Qualitative risk notes** (e.g., contamination non-conformances, schedule impacts) to capture assurance value alongside direct costs.

Demonstrating any cost efficiencies for FOGO compost as a viable end-market product provides a clear example of circular economy at work. Establishing end-markets for recyclable products enhances the value of the product whilst providing net benefits to the environment and developing a cost-competitive economy for compost blends.

Current case studies that explore cost-benefit scenarios for the use of recycled compost against BAU soils (within various blends) are limited. Most case studies examine the biodiversity and soil benefits to the proposed land, but do not include clear cost-benefits or such an analysis. This often adds an additional layer of complexity, especially when determining the metric factor to categorise the cost-benefits.

As an example, a study was developed in the USA[23] to evaluate the cost-benefits of using recycled compost. This was conducted within the agricultural sector, attempting to measure the cost-benefits based on the grain and produce yields from BAU soils or compost blends. Product yields estimated cost-benefits of over $1,000 across each produce category, even when initial compost procurement (CAPEX) was higher than synthetic fertilisers. Whilst this study is in the agricultural sector, it

[23] Hills, K. et al. 2019. *'Differentiating the value and cost of compost across likely farm use scenarios in Western Washington'.* Waste to Fuels Technology Partnership.

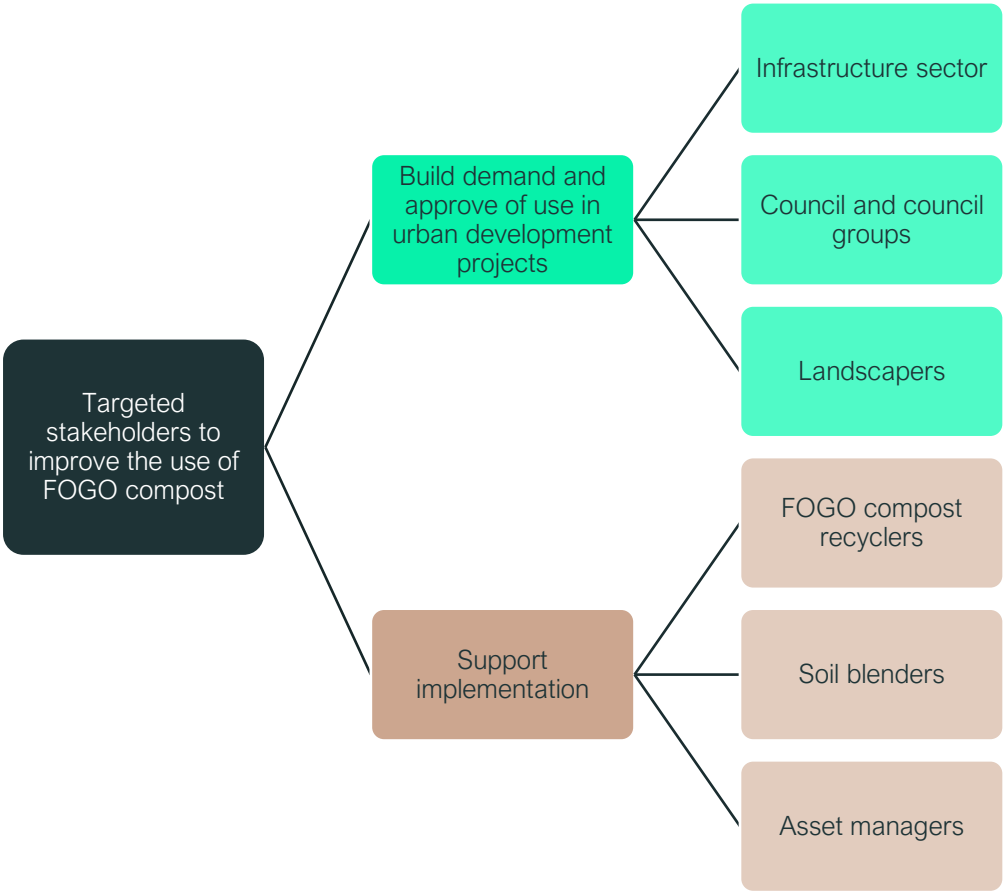
demonstrates the complexities of quantifying the benefits and the need for standardised metrics to be evaluated environmentally and financially.

11.3 Stakeholder prioritisation

Creating durable demand in the public built environment requires coordinated action across demand and supply sides of the market. EPA could act as a convener and technical mediator.

- **Demand side** (councils, property owners, infrastructure programs):
  Priorities are to demystify contamination and QA, present clear whole-of-life cost–benefits, and provide simple, contract-ready materials. Engagement should focus on procurement leads, project managers and designers, using pilots and case packs to demonstrate performance and cost outcomes and embedding compost-inclusive expectations in tenders, portfolio standards and planning settings.
- **Supply side** (recyclers, blenders, landscape contractors, designers):
  Priorities are to standardise specifications and protocols for distribution, testing and application; clarify roles and responsibilities in ITPs and contracts; and ensure traceability and certification. Suppliers could benefit through pre-qualification, assurance guidance and forums that connect them directly with buyers to align logistics and QA expectations.

NSW can mainstream FOGO-derived compost as a reliable, specification-driven input by making it easy to do the right thing. That means clear sub-standards and QA, visible cost and performance evidence from NSW pilots, procurement settings that recognise whole-of-life value, and targeted support to remove early barriers. With these elements in place, and sequenced through a targeted roadmap, FOGO-derived compost can move from occasional use to business-as-usual across councils, property and infrastructure projects.



12. Final remarks and next steps

The NSW built environment still leans on business-as-usual approaches to soils and landscaping. Turning FOGO-derived compost from a 'green' idea into routine practice requires three things working together: clear specifications that translate AS 4419 and AS 4454 into simple, project-ready recipes; visible quality assurance and supplier traceability to address contamination concerns; and locally credible evidence that whole-of-life costs are neutral or better than current approaches.

Stakeholders signalled genuine appetite to trial compost across councils, property and infrastructure, while also pointing to familiar barriers such as cost uncertainty, capability gaps and perceived contamination risk. For FOGO compost uptake and performance to be successful across the value chain, cross-functional collaboration, trials, and cost-benefit analysis between stakeholders will be required. Early adopters will be pivotal and how information is diluted and spread between stakeholder forums will determine the speed of utilisation in the built environment.

Providing safeguard assurances in the supply chain and managing early risk barriers noted in this report can help to reduce the commercial and physical risks that are associated with FOGO compost. Targeted financial support can offset early friction (for example, pilot grants, buy-recycled preferences or first-mover testing assistance), while recognition in IS (infrastructure) and Green Star (property) can reinforce adoption once evidence exists. These tools should complement, not replace, good specifications and QA.

As the NSW government continues to prioritise the development of urban precincts and redevelop suburbs and greenways, the FOGO-derived compost end-market will have an opportunity to embed itself into development supply chains. The scale of commercial and residential properties in NSW with expanding populations will necessitate demand for soil and cost-effective practices. An example where this may take place is Western Sydney's new Aerotropolis region[24]. There are opportunities to actively stimulate this end-market in the next few years to fulfil the demand and ensure the excess supply is aggregated across use-case scenarios, trials, and eventually, embedded into BAU.

Recommended next steps:

0–12 months:

1. Form a technical working group on built environment compost applications
2. Select and fund a small cohort of monitored pilots across contrasting soil contexts
3. Set simple, consistent monitoring protocols
4. Commence targeted professional development and learning for each specific targeted sector.

12-24 months:

1. Run pilot-programs in each targeted sector
2. Publish interim cost–benefit results and short case study packs
3. Capture relevant data for sub-standard development and QA guidance
4. Embed compost requirements into live government tenders
5. Align evidence needs with IS/Green Star where relevant.

24-36 months:

1. Consolidate pilot results for sub-standard development

[24] NSW Government. 2025. *'Western Sydney Aerotropolis; priority growth areas and precincts'*. < https://www.planning.nsw.gov.au/plans-for-your-area/priority-growth-areas-and-precincts/western-sydney-aerotropolis >

2. Develop and issue sub-standards for FOGO compost application to land
3. Establish standing panels with assured suppliers
4. Embed compost clauses in council templates and portfolio standards
5. Taper grants toward capability and assurance support as adoption normalises.
6. Use large Government projects (e.g., TfNSW) as an opportunity to test the sub-standards and large-scale applications.

With these steps, FOGO-derived compost can move from occasional use to business-as-usual—absorbing growing supply, improving landscape performance and resilience, and delivering measurable environmental and economic value for councils, asset owners and communities.

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Appendices

Appendix 1: Cost-benefit trial study, Washington USA

Cost benefits of different high-value compost soil blends and net positive returns from crop yields.

Table 2. Compost application scenarios for different crop types in western Washington

	Crop	Application rate[a]	Per acre net returns without compost (standard fertilizer regime)	Assumed yield increase	Per acre net returns with compost	Per acre increase in net returns	Compost value[b] ($/yard)	Compost cost[cd] ($/yard; including delivery and spreading;)
Low Value	Soft white winter wheat	20 dry tons/acre	$644	+10%	$708	**+$64**	$0.85	$27.05
High value	Blueberry	20 dry tons/acre	$2,719	+10%	$4,233	**+$1,514**	$19.93	$27.05
High value	Raspberry	7.5 dry tons/acre	$3,913	+10%	$5,066	**+$1,153**	$38.43	$27.05
High value	Direct market mixed vegetable[e]	20 dry tons/acre	$12,549	+20%	$17,398	**+$4,849**	$63.80	$27.05
High value	Direct market mixed vegetable[f]	20 dry tons/acre	$16,144	+20%	$20,581	**+$4,437**	$58.38	$27.05

[a] Relationship between tons and yards of compost: Assumed compost bulk density of 44.5 lbs/cubic foot or 1200lbs/cubic yard and moisture level of 44%. (Moisture from Cedar Grove analysis: 39.8% [June], 48.6% [January]. average = 44%). 20 dry tons = 76 cubic yards; 7.5 dry tons = 30 cubic yards.
[b] Compost value is based on assumed yield increase. Actual compost value will be dependent on soil type and management history, which are not accounted for in this scenario.
[c] Cost quoted by Cedar Grove Compost as price for standard fine grade compost at cost that they could provide to farmers ($15 per yard FOB at Cedar Grove). Freight to Enumclaw, Marysville, or Snoqualmie is an average of $5/cubic yard based on a full load of 50 cubic yards. Total cost delivered is $20/yard.
[d] Spreading cost is assumed at $15 per ton (wet weight). Eastern Washington spreading costs are typically $9-10 per ton for compost or other bulky material with a minimum of 120 acres (Thad Schutt, Cedar Grove, personal communication). Though some economy of scale could be achieved if custom spreading was more common in western Washington, it's unlikely that the cost would ever get as low as it is in eastern Washington because of the smaller field size that is common west of the Cascades.
[e] Net returns based on Colorado enterprise budget.
[f] Net returns based on British Columbia enterprise budget.